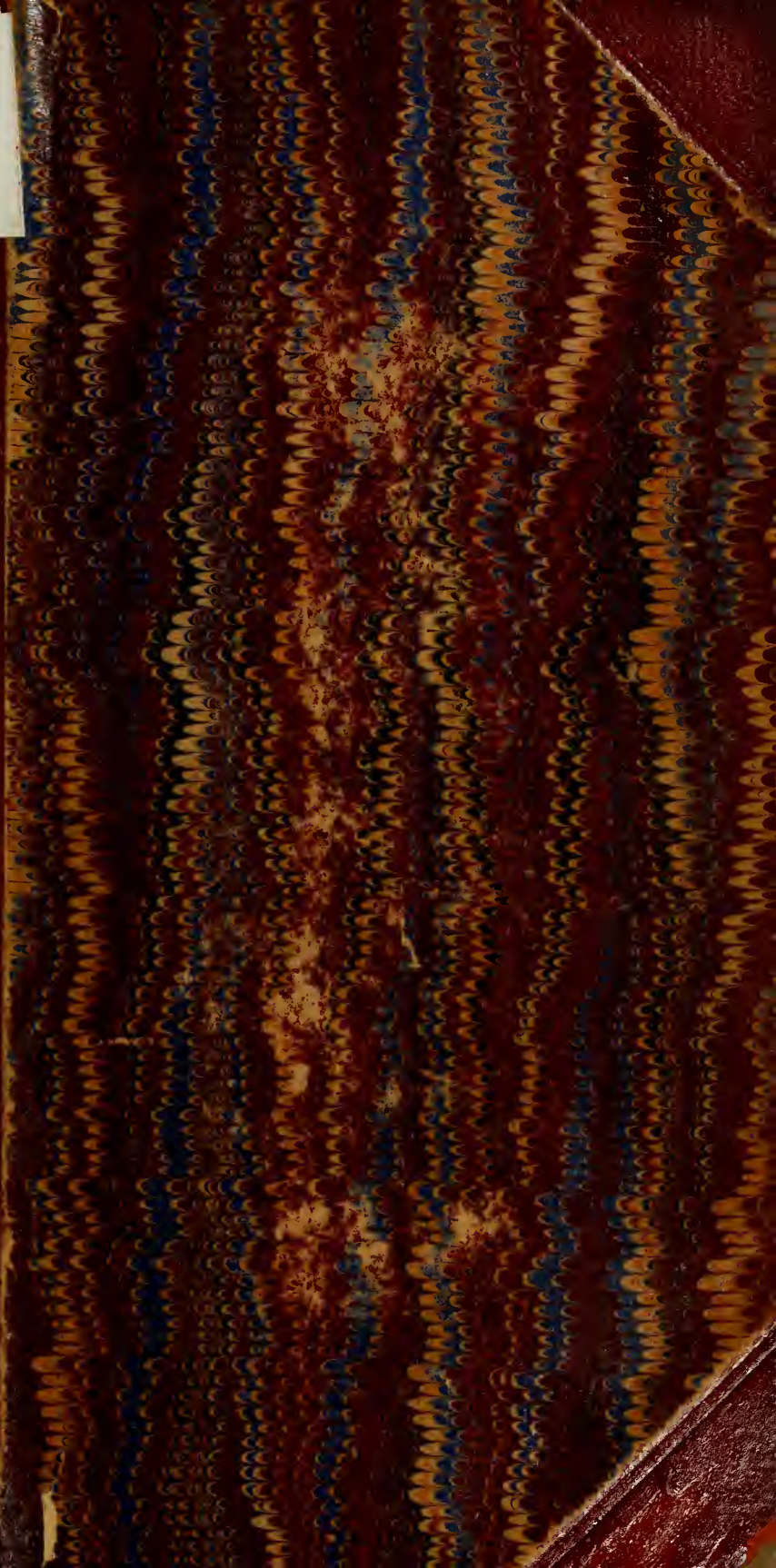


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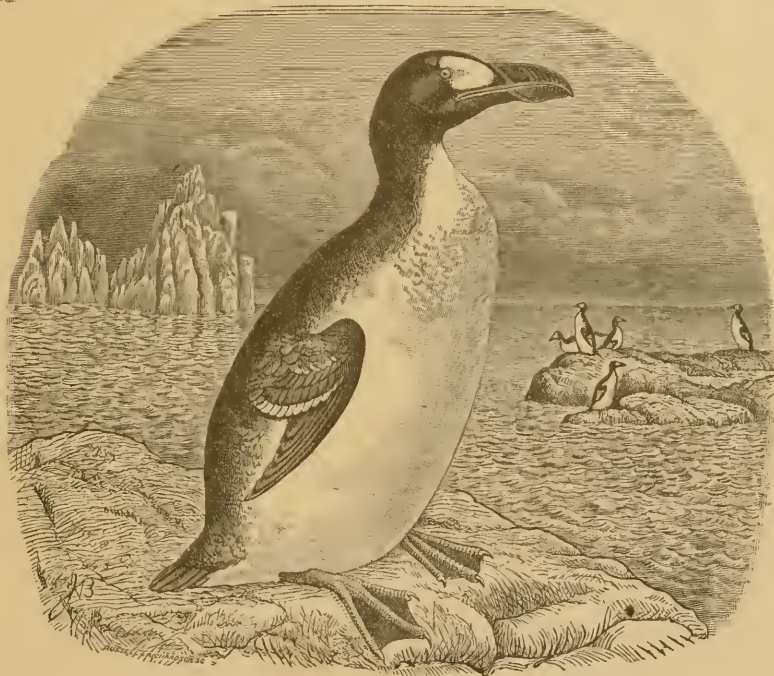
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THE AUK :

A QUARTERLY JOURNAL OF ORNITHOLOGY.

VOL. IV.

JANUARY, 1887.

No. I.

NOTES OF A BIRD CATCHER.

BY FREDERIC A. LUCAS.

AMONG the few pastimes of those who "go down to the sea in ships" and "do business in [the] great waters" of the southern hemisphere is that of fishing for the sea birds that abound in the vicinity of Cape Horn and the Cape of Good Hope. The birds that will take a hook are limited to a few species of Albatrosses and Petrels, some, like the Whale Bird (*Prion turtur*), which are extremely abundant, keeping at a respectful distance, while others, like the Giant Skua, steadily refuse to take a bait under any circumstances. First and foremost is the Wandering Albatross (*Diomedea exulans*), whose great size and cautious behavior makes his capture the crowning triumph of the avian angler. It is commonly stated that the Albatross takes a bait readily, but although this may have formerly been true, it is now a very misleading statement. The Albatross has undoubtedly learned wisdom by experience, and just as the grizzly bear is said by Mr. Roosevelt to have become more timid since the introduction of improved rifles, so, year by year, the Albatross has grown more and more distrustful of anything with a line attached to it. During four voyages I found that only the younger birds could be caught easily, those of the first year the most readily, those of the second less so, the difficulty increasing regularly with age. Like all other sea birds, Albatrosses can be most easily enticed into biting during tempestous weather when, having been

prevented for days from procuring their regular amount of food, the pangs of hunger overcome their natural distrust.

The Albatross has a deliberate way that accords well with his ample proportions and grave countenance, and when a bait is spied does not hasten to plant himself beside it like a greedy little Cape Pigeon, but usually takes a contemplative turn before settling down for a thorough inspection of the tempting dainty. If the investigation proves satisfactory he may condescend to bite, but it not infrequently happens that by the time this conclusion is arrived at the end of the line is reached also, and the morsel of fat pork is suddenly snatched away leaving the bird looking about him with a much aggrieved and puzzled expression. There the Albatross will often sit for five minutes before rising to follow the departing vessel, possibly to go through with precisely the same performance. Should he, however, be hooked, the spirit of opposition is aroused within him, and sitting upright, with big webbed feet thrust firmly forward, the Albatross beats the water vigorously with his wings, or holds them stiffly extended in an effort to free himself from the hook by mere dead weight.

The strain of such a bird pulling at the end of a hundred and fifty feet of line is considerable; but so long as he pursues these tactics his capture is pretty well assured. For the Albatross is not 'hooked' in the ordinary sense of the word, but is simply held by the hook catching in the curved bill. So long, therefore, as the strain on the line is steady, so long will the hook hold; once slackened, it drops by its own weight, and if, as sometimes happens, the bird flies towards the ship he is soon free.

Like the majority of sea birds, the Albatross cannot rise from a vessel's deck, but waddles about as helpless as if wing-clipped. As regards size, the largest of four measured by me—a two year old bird—was 10' 4" in extent and weighed about fourteen pounds. I have known one to weigh eighteen pounds, and have been told of specimens which actually measured 12, 13, and 15 feet from tip to tip. Is it not possible that it requires as many years for this bird to attain its full size as to put on the adult plumage? Certain it is that the largest specimens are the whitest and most wary. And I would suggest that melanistic examples of *Diomedea exulans* may not be infrequent, for twice on one voyage large, dark colored birds were observed which, from their size,

could have been no other than this species. These were not young of the year but sooty colored, like a vastly exaggerated Giant Fulmar. Unfortunately I did not improve my opportunities to observe the food of the Albatross, but the stomachs of two that were opened contained partially digested fragments of cuttlefish (?) and a small quantity of feathers.

They have been seen to devour the castaway body of a companion that had been caught and skinned, and to tear up and eat a large ling (*Haloporphyrus*). Doubtless anything that can be eaten does not come amiss.

The farthest north I have any personal record of seeing the Wandering Albatross is 30° S., 24° W.

The Molly-Hawk, or Molly-Mawk (*Diomedea melanophrys*), and the Goney (*D. culminata*) are more easily taken than their larger relative, but the Sooty Albatross (*Phæbetria fuliginosa*)—in the ordinary track of vessels at least—is wary in the extreme, and, although it will approach so near that the eye is distinctly visible, steadily refuses to even look at a bait. *Diomedea melanophrys* was seen occasionally in the harbor of Valparaiso.

Most knowing of all Petrels is the Cape Hen, or Giant Fulmar (*Ossifraga gigantea*). If a loose piece of fat pork was thrown out, it was immediately snatched up, but even during heavy gales it was quite impossible for me to coax one to touch a piece with hook and line attached. Where the tempting morsel was large the Cape Hen would indeed swoop towards it as if about to alight, but caution invariably got the better of appetite, and I am ready to take oath that these birds actually winked as they sailed by. In its movements, and especially when alighting, the Giant Fulmar has an uncouth, angular look about it that is very amusing. The species not uncommonly ranges as far north as 12° south latitude, for several were seen and two shot at the Chincha Islands during the month of November. One perfect albino was seen, presenting a strange contrast to the others by which it was accompanied.

Majaqucus aquinoctialis is apparently not common off Cape Horn and of the few seen fewer still could be induced to take a hook. Those that did so invariably escaped by reversing the tactics of the Albatross and flying towards the ship instead of indulging in worse than useless opposition. It being simply

impossible to pull in line as fast as a bird could fly, the hook always dropped from the bird's beak.

The Southern Fulmar (*Fulmarus glacialisoides*) is not uncommon off Cape Horn, and is readily taken. It bites freely, and fights well when captured, scratching, flapping, and biting in a very vigorous manner. The quarrelsome disposition of this bird at times becomes a drawback to his capture, for a Fulmar will frequently devote his time and energies to driving away the Cape Pigeons sooner than to take the bait himself.

Thalassoica antarctica is about as common, or uncommon, as the preceding species, and is also comparatively easy to capture. As a rule both these species keep farther from ships than the abundant and tame Cape Pigeon (*Daption capensis*). Of the species herein noted, *Thalassoica antarctica* appears to be the most exclusively southern in its range. Going southwards *Daption* made its appearance May 16, *Fulmarus* May 20, and *Thalassoica* not until June 21.

The well known Cape Pigeon (*Daption capensis*) is usually met with in the Atlantic near latitude 35° S., or "off the River 'Plate,'" as it is termed in the vernacular. On the Pacific coast it seems to range much farther north, for in July we left them outside the harbor of Valparaiso, and in September they were common in latitude 11° south. Captain Carey, of the ship 'Calhoun,' informed me that a few followed that vessel nearly to Acapulco, 16° N.

The Cape Pigeons are always hungry and it is an easy matter to take any desired number of them. Ordinarily they are set free after a short detention, but occasionally they are killed, and after parboiling made into a pot pie. Concerning the flavor thereof I cannot now speak positively, as it has been many years since my last taste of Cape Pigeon pie. This species has an extremely disagreeable habit, shared by many of its relatives, of vomiting up when captured a thick, oily, and ill-smelling liquid, so that it is necessary to handle this bird with some caution.

The Cape Pigeon *can* dive although it very rarely does so, usually gathering its food from the surface of the water. Once or twice I have noticed them dipping up the water as if drinking, but this may not have been the case.

Like the other Petrels, but to a still greater extent, the Cape Pigeons delight in assembling around the contents of the cook's swill pail. If there be nothing but dish-water, sufficient only to

make a smooth, oily spot, down will go every bird near, and there they will sit for five, or even ten minutes gazing at one another and apparently waiting, like Micawber, for something to turn up. My note book says that in February, going east, we saw no Cape Pigeons, the Petrels seen then being probably *Æstrelata*, which, although following in our wake, kept at a considerable distance.

Last and least (in size at all events) is the busy Mother Carey's Chicken, never at rest but perpetually fluttering over the water, ever and anon pattering over the surface yet not even alighting to feed.

Once, and only once, did I observe these little birds take a bait, and that was when a heavy gale of several days' duration had apparently rendered them perfectly ravenous. *

The following method can be vouched for as very successful in capturing the Stormy Petrels. To one end of a spool of stout, black thread fasten a bit of wood just large enough to make a drag that will keep the thread taut when towed behind a vessel. To this attach at intervals of from four to six feet threads with a small hook or bent pin at the end, graduating the length according to the distance they will be from the drag. These will hang from the main thread like droppers from a leader and the little Petrels flying to and fro in the vessel's wake will sooner or later strike some of the threads and become entangled.

A few words in conclusion on the question as to whether or not the birds seen in a ship's wake are the same day after day. It seems to me that Capt. Hutton is correct in his opinion that while they *may* be it is doubtful if they are. In exceptional cases, as, for example, the birds which followed the ship 'Calhoun' nearly to Acapulco, it would appear that the birds were undoubtedly a small flock enticed beyond their usual range. Personally, I can see no objection to the theory that the Albatross and other birds can fly for several days in succession without rest, the more that their easy sailing flight requires the minimum of exertion. Moreover, I have on moonlight nights occasionally observed birds circling around the ship, and on two occasions birds were picked up on deck between 4 and 8 A. M. One of these was a small *Puffinus*, the other an *Occanodroma*(?). I

* This has been my own experience with these little birds, but Col. Goss tells me that on the Grand Banks they will bite eagerly at a hook baited with a bit of cod liver.

do see serious objections to the theory that sea birds regularly rest upon the water at night, in the long and heavy gales so prevalent off Cape Horn, which would seem to make such a proceeding a physical impossibility. And how is it with the little Stormy Petrels which have apparently a constitutional aversion to sitting in the water?

It is doubtful if the Albatross habitually follows any one vessel for a considerable length of time, while the reverse is probably true of the Cape Pigeon. While the amount of 'pickings' from a single ship would make quite an item in the daily fare of several Cape Pigeons, they would count for little with one Albatross. This latter bird is much given to making vast stretches back and forth over the ocean, and even while near a ship continually circles round about in search of food. That an Albatross *can* see a vessel distinctly from an elevation of a thousand feet is doubtless true, but judging from my own experience this bird rarely ascends to such a height, for I *never* observed it more than two or three hundred feet above the ocean. Is it not more probable that the bird meets with vessels while quartering over the ground as just described and stays by them until drawn off in search of food? Contrary to what might be supposed, it is during calms that birds become detached from the ship they may have been following. At such times the Albatross is especially given to resting upon the water, from which it cannot then rise without much flapping of wings and splashing of water as it runs along the surface until it has acquired the necessary momentum to start upon its customary graceful flight. The smaller birds follow the example of their larger relatives, and, scattered here and there by twos and threes, alternately quarrel and preen their plumage until the breeze springs up, and with it everything once more starts into renewed activity.

A NEW VIREO FROM GRAND CAYMAN, WEST INDIES.

BY CHARLES B. CORY.

THE box of birds lately received from Grand Cayman, or Great Cayman, contained still another new bird from that most interesting island, which I propose to call

Vireo caymanensis, sp. nov.

SP. CHAR.—(♂ Coll. C. B. Cory, No. 6273.) Upper parts dull olive, brightest on the rump and upper tail-coverts; crown darker than the back, showing a slight brownish tinge; underparts dull yellowish-white, faintly tinged with olive on the sides and flanks; upper throat dull white; a dull white superciliary stripe from the upper mandible; a stripe of slaty brown from the upper mandible passing through and back of the eye; quills dark brown, narrowly edged with dull green on the outer webs, most of the inner feathers showing a white edging on the basal portion of the inner webs; tail dull olive brown, the feathers showing green on the edges; upper mandible dark; lower mandible pale; feet slaty brown.

Length, 5.40; wing, 2.75; tail, 2.25; tarsus, .75; bill, .52.

HABITAT. Island of Grand Cayman, West Indies.

Several specimens of *Seiurus noveboracensis* were received from Grand Cayman, having been taken there in August. A few birds were also sent from Little Cayman; they were *Polioptila carulea* (Linn.), *Dendroica dominica* (Linn.), *Vireo calidris barbatulus* (Cab.), *Euethia olivacea* (Gmel.), *Elainea martinica?* (Linn.), *Tyrannus dominicensis* (Gmel.), and a *Zeniada*. The latter appears to be somewhat different from *Z. spadicea*, but a larger series is necessary to determine if the comparatively slight differences are constant. It is of a somewhat paler brown, and shows a decided slaty tinge on the flanks; the metallic reflections on the feathers of the neck appear different in color, being paler and less in extent. It is possible that the two birds are not separable specifically, but in case future investigation should prove them to be distinct I would propose the name of *Zenaida richardsoni* for the Little Cayman bird.



ADDITIONS TO THE CATALOGUE OF THE BIRDS OF KANSAS.

BY N. S. GOSS.

THE following observations have been made, and notes gathered, since the publication, May 1, 1886, of my 'Revised Catalogue of the Birds of Kansas':

Podilymbus podiceps (*Linn.*). PIED-BILLED GREBE.—June 8, 1886, I found these birds breeding in a pond in Meade County. I shot a young bird about two-thirds grown and saw several others, and caught a glimpse, in the rushes, of an old bird followed by little chicks, not more than a day or two old.

Phalaropus tricolor (*Vicill.*). WILSON'S PHALAROPE.—June 8, 1886, I found three pairs of these birds breeding on marshy ground, bordering a slough or pond of Crooked Creek, Meade County, and I therefore enter the species as an occasional summer resident in Western Kansas; quite common throughout the State during migration. Nest on the ground, usually on hummocks, quite deeply excavated, and lined with leaves from the old dead grasses; eggs, three or four—usually four; ground color, cream to ashy drab, rather thickly but irregularly blotched with varying shades of brown to black. The female is larger and brighter in color than the male, but from limited observations of the birds I am led to think certain writers are mistaken in reporting that the females arrive first and do all the courting, but leave the work of nest-making, incubation, and the rearing of the young to the males. I have never been so fortunate as to find either of the birds upon the nest; but certainly, both appear equally watchful and solicitous, circling around and croaking as one approaches their nests, or near their young (grayish little fellows that leave the nest as soon as hatched). The earliest arrival noticed in the State was at Neosho Falls, April 29, 1879. In this flock, as in all others seen at or about the time of their arrival, the sexes appeared to be about equally divided, and I am inclined to think further examination will prove the birds to be joint workers in the hatching and rearing of their young. With a view to removing all doubts, I trust all naturalists who are so fortunate as to be upon their breeding grounds during the breeding season will carefully note and report their observations.

Ægialitis nivosa (*Cass.*). SNOWY PLOVER.—Summer resident on the salt plains along the Cimarron River, in the Indian Territory, the northern limits of which extend across the line into southwestern Comanche County, Kansas. Quite common; arrives about the first of May; begins laying the last of May. Nest, a depression worked out in the sand; eggs, three, 1.20 × .90, pale olive drab, approaching a light clay color, with a greenish tint, rather evenly and thickly marked with irregularly-shaped

ragged-edged splashes and dots of dark or blackish brown. (See Auk, III, 1886, p. 409.)

Colinus virginianus texanus (*Lawr.*). TEXAN BOB-WHITE.—This bird is entered in the A. O. U. 'Check-List' as "Hab. Southern and Western Texas, north to Western Kansas." On receipt of the 'List', I wrote to Mr. Robert Ridgway, a member of the committee that prepared the list, to know when and where in the western part of the State the birds had been taken. In reply he says: "*Colinus virginianus texanus*, as a bird of Kansas, rests on two specimens, adult females, in the National Museum, labelled, respectively, No. 34425, Republican Fork, May 27, 1864, Dr. Elliott Coues, U. S. A.; and No. 34425, same locality, date, and collector. (See Hist. N. Am. B., III, p. 474.) These specimens agree exactly with typical examples of *texanus* as compared with *virginianus* proper." Since the early settlement of the State I have known through report of military men and hunters that Bob-whites were occasionally seen on the Cimarron River. I never met with them there, and had taken it for granted that they were *C. virginianus*; but as the birds were found in Western Kansas long before our Bob-whites, in following up the settlements, reached the central portion of the State, I am now inclined to think further examination may prove the western bird of the plains to be variety *texanus*, and that they reached that portion of the country by following north on the old military trails. I have written to several persons in that region for specimens, but as yet have no reply.

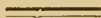
Empidonax pusillus traillii (*Aud.*). TRAILL'S FLY-CATCHER.—Mr. George F. Brenninger, Beattie, Marshall County, has kindly sent me for examination a nest containing three eggs, taken July 17, 1886, in a thick second growth of timber, on the bank of a small creek at Beattie, and writes that he found in the same vicinity quite a number of nests. The earliest found, with a full set of eggs, was June 14. In the Goss Ornithological Collection is a female which I shot at Neosho Falls, July 26, 1881, and I have occasionally noticed the birds during the summer months, and have no doubt but they will prove to be quite a common summer resident. I congratulate Mr. Brenninger on the find, and thank him for calling my attention to it. The nests are usually placed in upright forks of the small limbs of trees and bushes, from four to ten feet from the ground. A rather deep

cup-shaped nest, closely resembling in form and make-up the nest of *Dendroica aestiva*. Composed chiefly of small stems or twigs from plants, and flaxen fibrous strippings from the same, with a few scattering blades of grass, and here and there an occasional feather, and lined thickly and rather evenly with fine hair-like stems from grasses; eggs, three and four. Dimensions of the three eggs sent, $.70 \times .55$, $.70 \times .55$, $.69 \times .55$; and of a set of four eggs taken June 17, 1881, at Galesburg, Illinois, $.72 \times .55$, $.72 \times .55$, $.72 \times .54$, $.70 \times .54$; color, cream white thinly spotted and speckled with reddish brown, thickest around large end.

Spizella monticola ochracea Brewst. WESTERN TREE SPARROW.—Mr. William Brewster, in "Notes on some Birds collected by Capt. Charles Bendire, at Fort Walla Walla, Washington Territory" (Bull. Nutt. Orn. Club, Vol. VII, Oct. 1882, p. 225), under the head of "species and varieties calling for special consideration" (p. 228), gives a full description of this form from a careful examination and comparison of the Fort Walla Walla specimens with specimens of the typical eastern bird, deciding that the differences in coloration and markings were sufficient to rank it as a variety of *S. monticola*, and naming the bird the Western Tree Sparrow, *S. monticola ochracea*. He gives its habitat as "Western North America, east to Dakota, north to Arctic Ocean; Alaska." At Wallace, on the 14th of October, 1883, I shot several Tree Sparrows, and thought at the time that they were somewhat paler in color and different from specimens I had taken in the eastern part of the State; but on comparison I reached the conclusion that they were the young birds of the year, and gave the matter no further thought until I noticed the bird entered in the A. O. U. 'Check-List' as occurring in "Western Kansas." I at once wrote to Mr. Brewster for typical specimens of both this and the eastern bird, which I received through his friend, Mr. Arthur P. Chadbourne, of Cambridge, Massachusetts. Just before receiving the specimens, I killed (October 25, 1886), three of the birds in Cheyenne County (north-west corner of the State). I now find, on comparing the specimens, that all the western birds, and a female in the Goss Ornithological Collection, taken November 22, 1878, at Neosho Falls, are in every respect similar in color to Mr. Chadbourne's specimen, labelled *S. monticola ochracea*, Ellis, Kansas, January,

1886. The specimens examined from Eastern Kansas are nearly all the true *S. monticola*, the coloration being fully as rich and deep as that of the eastern specimen taken in Middlesex County, Massachusetts, December 1, 1882. I therefore enter the Western Tree Sparrow as a winter resident; abundant in Middle and Western Kansas, and not uncommon in the eastern portion of the State. The western specimens, however, that I have examined, were all captured in the fall or early winter, and I should be led to think it possible upon further examination, especially of the birds in their spring plumage, might prove the paler form to be the immature winter dress, were it not for the fact that Mr. Brewster, in making his examination, had before him not only his own large collection, but that in the National Museum, which must have embraced specimens taken at different seasons of the year.

Turdus ustulatus swainsonii (*Cab.*). OLIVE-BACKED THRUSH.—June 6, 1886, I saw several of these birds in the timber skirting Crooked Creek, in the northern part of Meade County. They were probably migrants, but the date is so late in the season that I think it worthy of mention.



LIST OF THE MIDSUMMER BIRDS OF THE KOWAK RIVER, NORTHERN ALASKA.

BY CHARLES H. TOWNSEND.

As my 'Notes on the Natural History of Northern Alaska,' forming part of the 'Report of the Arctic Cruise of the U. S. Revenue Steamer *Corwin*,' recently ordered to be published by Congress, will probably be several months in the hands of the Public Printer, a list of the birds I found in those high latitudes may be acceptable to the readers of 'The Auk.'

The Kowak was explored by a party sent out from the 'Corwin,' in 1885, in charge of Lieut. J. C. Cantwell, consisting of Lieut. Cantwell, myself, two seaman, and several Eskimo guides. We were on the river from the first of July until the last of August, and were the first white men to reach the head-

waters, which we discovered at a distance of probably more than five hundred miles from the sea.

This river flows into the Arctic Ocean at Kotzebue Sound, through a delta forty miles broad, and throughout its course lies entirely within the Arctic Circle.

In the interior the country is wooded and mountainous, and the lower course of the river is through rolling tundra lands.

The list is restricted to the species actually obtained or seen in the region.

1. *Urinator adamsii* (Gray). Common.
2. *Urinator lumme* (Gunn.). Rather common.
3. *Larus glaucus* Brünn. Common.
4. *Larus leucopterus* Faber. Common.
5. *Larus philadelphia* (Ord). Common; breeds.
6. *Sterna paradisæa* Brünn. Common.
7. *Merganser serrator* (Linn.). Common; breeds.
8. *Anas carolinensis* Gmel. Common; breeds.
9. *Dafla acuta* (Linn.). Abundant; breeds.
10. *Anser albifrons gambeli* (Hartl.). Abundant; breeds.
11. *Branta canadensis minima* Ridgw. Abundant; breeds.
12. *Olor columbianus* (Ord). Rare.
13. *Grus canadensis* (Linn.). Common.
14. *Tringa minutilla* Vieill. Numerous.
15. *Ereunetes pusillus* (Linn.). Common.
16. *Totanus flavipes* (Gmel.). Common; breeds.
17. *Bartramia longicauda* (Bechst.). Common; breeds.
18. *Actitis macularia* (Linn.). Rather rare.
19. *Numenius tahitiensis* (Gmel.). One specimen.
20. *Ægialitis semipalmata* Bonap. Common.
21. *Arenaria melanocephala* (Vig.). Rare.
22. *Dendragapus canadensis* (Linn.). Seen once; found breeding.
23. *Lagopus lagopus* (Linn.). Not abundant.
24. *Circus hudsonius* (Linn.). Not uncommon; breeds.
25. *Archibuteo lagopus* (Brünn.). One specimen.
26. *Falco columbarius* Linn. Rather common; breeds.
27. *Pandion haliaëtus carolinensis* (Gmel.). Common; breeds.
28. *Asio accipitrinus* (Pull.). One specimen.
29. *Ceryle alcyon* (Linn.). Common; breeds.
30. *Perisoreus canadensis fumifrons* Ridgw. Common; breeds.
31. *Corvus corax sinuatus* (Wagl.). Common.
32. *Scolecophagus carolinus* (Mull.). Not common.
33. *Acanthis linaria holbøllii* (Brehm.). Only a few seen.
34. *Calcarius lapponicus* (Linn.). Common on the coast only.
35. *Zonotrichia intermedia* Ridgw. Very common; breeds.
36. *Spizella monticola ochracea* Brewst. Rare; breeds.

37. *Junco hyemalis* (Linn.). Not numerous.
38. *Passerella iliaca* (Merr.). Rare.
39. *Tachycineta bicolor* (Vieill.). Common; breeds.
40. *Chelidon erythrogaster* (Bodd.). Common; breeds.
41. *Lanius borealis* Vieill. Seen but once.
42. *Dendroica æstiva* (Gmel.). Common; breeds.
43. *Dendroica coronata* (Linn.). Very common; breeds.
44. *Dendroica striata* (Forst.). Not common; breeds.
45. *Seiurus noveboracensis* (Gmel.). Moderately common.
46. *Sylvania pusilla* (Wils.). Common.
47. *Anthus pensilvanicus* (Lath.). Only a few seen.
48. *Parus hudsonicus* Forst. Seen once only.
49. *Phyllopeustes borealis* (Blas.). One specimen.
50. *Turdus aliciaë* Baird. Common.
51. *Merula migratoria* (Linn.). Common.
52. *Hesperocichla nævia* (Gmel.). Common; found breeding.

It will be noticed that some of the best known boreal species, such as the Hawk Owl, Snowy Owl, Pine Grosbeak, Crossbill, Gyrfalcon, etc., are conspicuous by their absence; but I saw nothing of them, although the country is sufficiently diversified to be adapted to the wants of almost all of them.

SUMMER BIRDS OF THE BRAS D'OR REGION OF CAPE BRETON ISLAND, NOVA SCOTIA.

BY JONATHAN DWIGHT, JR.

So far as I can learn, no definite information regarding the birds of Cape Breton has found its way into print. I feel, therefore, that the list of species I met with during a couple of weeks spent last summer in the centre of the island may be of some interest. My stay was from August 4 to August 16, and I will venture to say that the species noted during that period are a fair index of the summer residents of the country bordering upon the Bras d'Or lakes, although my observations were confined chiefly to the immediate vicinity of Baddeck, Victoria Co., N. S. As one may see by the map, the Great and little Bras d'Or nearly cut the island in two, forming large inland seas, resembling lakes, which are little affected by the tide, on account of their narrow connection with the ocean. Around them hills slope up

from the water's edge to a height of several hundred feet, sometimes reaching an altitude of six or seven hundred, but nowhere deserving the name of mountains. There is a great similarity in the shores as one sails along them. Green fields largely replace the forest that has retreated from the attacks of the farmer, in some places to the very tops of the highest hills, and dotted about upon the hillsides one sees little houses and barns. To the eastward the hills become higher and wilder, and white cliffs of plaster gleam in the sunlight between the green forest above and the blue water below, adding much to the picturesqueness of scenery that is unmarred by tracts of standing dead timber and the look of desolation so common in the northern woods. With the northern part of the island, which is mountainous, rugged, and wild, and with the coast and its sea birds, I had nothing to do.

Occasionally I met with a few shore birds, but the gravelly beaches of the Bras d'Or do not attract them. The Arctic Tern was a constant feature in the landscape, and here and there specked with white the blue expanse of water. It breeds unmolested on some of the small islands and jutting points about the lakes, and was one of the most conspicuous species I met with. The Kingfisher and the Spotted Sandpiper were the only other species daily seen along the shore. Sometimes I used to see Herring Gulls, one day I saw a Petrel, and several times I saw a few Ducks, mostly 'flappers,' but none of these were identified with certainty. Neither were two sets of Ducks' eggs, found one day upon a small island, although the nests and eggs corresponded in every way to a genuine set of the Red-breasted Merganser I once found similarly situated.

Near the village of Baddeck, hay-fields, in which the crop was being gathered at the time of my visit, extend along the shore. Back of them is a partly cleared divide covered with spruce and fir, and a sprinkling of maple, birch, and larch, none of the timber large, and many of the clearings, especially if wet, grown up with alders. This divide slopes down into the valley of the Baddeck River, where hay-fields are again the most prominent feature. North of this the mountains begin in a low range some seven miles from Baddeck, but I got no farther in my explorations than the heavy timber extending to the foot of these, and therefore, no doubt, several forest-loving species are lacking in my list.

I expected to find more Warblers than I did, the Black-throated Green, the Magnolia, the Myrtle, and the Black-and-White Warblers being the only ones that could be called fairly common. They were often associated with Hudsonian Chickadees, Golden-crowned Kinglets, and a few Black-capped Chickadees. Many of the species noted were leading about noisy young birds that had much more to say for themselves than their more discreet parents, although few songs of any sort were heard. The Slate-colored Junco trilled once in a great while, but I did not hear the White-throated Sparrow nor the Hermit Thrush even once, and I saw little of them in consequence. I met with the Chipping Sparrow but once. This was at Whycomogah, twenty miles southwest of Baddeck, where on August 11 I saw a family. Here, too, I saw the first flock of Swallows (mostly Bank and Cliff Swallows) ostentatiously ready to migrate. The latter species was still breeding on barns in two localities I visited, but not abundantly. There were not many nests, all told. Barn and White-bellied Swallows were fairly abundant. Several species of Sparrows, Goldfinches, Purple Finches, and Rusty Blackbirds were to be found almost daily about the fields and swampy 'runs,' and a few Chimney Swifts and Night-hawks were occasionally seen. The Kingbird, Bobolink, and Rose-breasted Grosbeak were each met with once, and most of the other species mentioned came under my notice only occasionally. Ravens are said to be common farther north. I saw but one. Crows and Robins abounded. Every day or two I would see an Eagle sailing overhead, and those identified were Bald Eagles. Woodpeckers were scarce. The Ruffed Grouse of the region as well as the Canada Grouse were very tame. One day I drove by a pair of the latter at the roadside, momentarily mistaking them for a pair of speckled bantams. The male was puffed up and strutting about much like a miniature turkey-cock, while the female, and a young one two-thirds grown, looked on in admiration.

I may say in conclusion that the weather during my stay was mostly bright and pleasant, the thermometer daily in the seventies, and fresh breezes prevailing.

I might advance several plausible reasons why I did not find other species that I have often met with in some parts of Nova Scotia and New Brunswick, but I prefer not to theorize, and close with a list of those that actually came under my notice.

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| 1. <i>Larus philadelphia.</i> | 31. <i>Scolecophagus carolinus.</i> |
| 2. <i>Sterna paradisæu.</i> | 32. <i>Carpodacus purpureus.</i> |
| 3. <i>Ardea herodias.</i> | 33. <i>Spinus tristis.</i> |
| 4. <i>Rallus virginianus?</i> | 34. <i>Ammodramus sandwichensis</i>
<i>savanna.</i> |
| 5. <i>Gallinago delicata.</i> | 35. <i>Zonotrichia albicollis.</i> |
| 6. <i>Tringa minutilla.</i> | 36. <i>Spizella socialis.</i> |
| 7. <i>Ereunetes pusillus.</i> | 37. <i>Junco hyemalis.</i> |
| 8. <i>Totanus flavipes.</i> | 38. <i>Melospiza fasciata.</i> |
| 9. <i>Actitis macularia.</i> | 39. <i>M. georgiana.</i> |
| 10. <i>Arenaria interpres.</i> | 40. <i>Habia ludoviciana.</i> |
| 11. <i>Dendragapus canadensis.</i> | 41. <i>Petrochelidon lunifrons.</i> |
| 12. <i>Bonasa umbellus togata.</i> | 42. <i>Chelidon erythrogaster.</i> |
| 13. <i>Circus hudsonius.</i> | 43. <i>Tachycineta bicolor.</i> |
| 14. <i>Haliaeetus leucocephalus.</i> | 44. <i>Clivicola riparia.</i> |
| 15. <i>Falco sparverius.</i> | 45. <i>Ampelis cedrorum.</i> |
| 16. <i>Coccyzus</i> sp? | 46. <i>Vireo olivaceus.</i> |
| 17. <i>Ceryle alcyon.</i> | 47. <i>Mniotilta varia.</i> |
| 18. <i>Dryobates villosus.</i> | 48. <i>Dendroica æstiva.</i> |
| 19. <i>D. pubescens</i> | 49. <i>D. coronata.</i> |
| 20. <i>Sphyrapicus varius.</i> | 50. <i>D. maculosa.</i> |
| 21. <i>Colaptes auratus.</i> | 51. <i>D. virens.</i> |
| 22. <i>Chordeiles virginianus.</i> | 52. <i>Geothlypis trichas.</i> |
| 23. <i>Chætura pelagica.</i> | 53. <i>Sylvania pusilla.</i> |
| 24. <i>Tyrannus tyrannus.</i> | 54. <i>Scotophaga ruticilla.</i> |
| 25. <i>Empidonax flaviventris.</i> | 55. <i>Purus atricapillus.</i> |
| 26. <i>E. pusillus traillii.</i> | 56. <i>P. hudsonicus.</i> |
| 27. <i>Cyanocitta cristata.</i> | 57. <i>Regulus satrapa.</i> |
| 28. <i>Corvus corax sinuatus.</i> | 58. <i>Turdus aonalaschke pallasii.</i> |
| 29. <i>C. americanus.</i> | 59. <i>Merula migratoria.</i> |
| 30. <i>Dolichonyx oryzivorus.</i> | |

ON THE AVI-FAUNA OF PINAL COUNTY, WITH
REMARKS ON SOME BIRDS OF PIMA AND
GILA COUNTIES, ARIZONA.

BY W. E. D. SCOTT.

With annotations by J. A. Allen.

(Continued from Volume III, p. 432.)

106. *Tyrannus verticalis.* ARKANSAS KINGBIRD. — One of the commonest and most conspicuous birds of the plains about Tucson, Florence, and Riverside, from early springtime until late in autumn. I have found that it arrives in the Catalinas about the last of March (the 28th is the

earliest record), and becomes common during the ensuing week. The latest record I have of it in the foothills proper (altitude, 400 feet) is September 5; but even by the 20th of August they begin to be uncommon at this elevation. I found them late in April (April 19-24, 1885) rather common up to about 9000 feet, but did not find them in the pine forests. Two broods of from three to five young are generally raised each season, the altitude of the nest from the ground varying greatly with the surroundings, and the kind of tree is seemingly a matter of indifference.

107. *Tyrannus vociferans*. CASSIN'S KINGBIRD.—Though doubtless occurring as a migrant on the plains, I have records of this species only from the foothills about Riverside and from the Catalina Mountains. It does not, so far as I am aware, breed at so low altitudes as *T. verticalis*, nor is it as abundant or so generally distributed in the breeding season as that species. It arrives in the Catalina foothills late in March, my first record, and that of but a single bird, being March 28th, 1885, at an altitude of 3500. The general arrival for the same year and locality was April 7. Pairing and mating was first noticed April 16, 1885. At the higher limits of its range in the breeding season—about 9000 feet—it is much more common than *T. verticalis*, though the reverse is true as regards the lower limit of its range—about 3500 feet—in the breeding season. Though arriving about the same time of year as *T. verticalis*, all my observations lead me to believe that its stay in the mountains and foothills is very much longer than that of its congener. At an altitude of 3500 feet, which is the extreme lower limit of the evergreen oaks, I found *T. vociferans* not at all uncommon on October 9, 1884, and my note book bears constant record of its occurrence up to that time, while I find nothing about *T. verticalis* later than early September in the same region; all these notes being made in the Catalina Mountains.

Two broods of from three to five young are usually reared each season; and the position of many nests I have examined shows a decided preference for the evergreen oaks over other trees. The nest, which is commonly from twenty to twenty-five feet from the ground, is most always placed near the extremity of a branch, and is sheltered and hidden by the thick leaves.

108. *Myiarchus mexicanus magister*. ARIZONA CRESTED FLY-CATCHER.—This species I have found to be common in spring and summer about Tucson, Florence, Riverside, and in the foothills of the Catalina Mountains up to about 4500 feet, which is the extreme limit in altitude indicated by my notes. It is as common at all these points as is *M. crinitus* at any point where I have met with that species, and just about Tucson, in the mesquite and giant-cactus groves, it is much more abundant than is *M. crinitus* at any point in its habitat which I have visited. In the Catalinas, altitude 4000, the species arrives about April 20, and remains until late in August or early in September. I found a nest at this point built in a deserted Woodpecker hole in a dead sycamore stub. It was entirely similar in construction to that of *M. crinitus*, even to the traditional snake skins, and contained five eggs nearly ready

to be hatched, very similar to those of *M. crinitus*, save that they are a little larger. But one brood is reared in the Catalina region. About Tucson they nest commonly in deserted Woodpecker holes in the giant cactus.

109. *Myiarchus cinerascens*. ASH-THROATED FLYCATCHER.—An abundant migrant and summer resident, breeding throughout the region in suitable localities. It arrives in the Catalinas about the 20th of March, and on the plains somewhat earlier; a few probably spend the winter at the lower altitudes in the extreme southern portion of the Territory. I have no records that indicate a later stay in the Catalina or Pinal Mountains than about the last of September. The nests are placed in deserted Woodpecker holes and in natural cavities in almost any kind of tree, and also in the giant cactus. Two broods are reared at the lower elevations, and from three to five eggs are laid.

[A half-fledged nestling is much darker in color above, and less gray on the throat and breast, than are the adults. The head in the young bird is decidedly *blackish* brown; the rest of the dorsal plumage dark brown. The wing-coverts and inner secondaries are edged with reddish brown instead of white, and the rectrices are broadly edged externally with rufous, without white edging on outer pair. The dusky area is much narrower and blacker than in adults.—J. A. A.]

110. *Myiarchus lawrencei olivaceus*. OLIVACEOUS FLYCATCHER.—My personal experience with this species is limited to the capture and record of but a single individual. It was taken in a cañon in the Catalina Mountains, at an altitude of 5000 feet, and is catalogued as "No. 66, ♂, 13th June, 1884." Mr. F. Stephens found the species commonly in the Santa Rita Mountains.

111. *Sayornis saya*. SAY'S PHŒBE.—Common winter resident, and a regular though not very common migrant and summer resident, breeding sparingly, in the Catalina Mountains. My earliest records of it, near my residence, are about the first of March, and it remains till the approach of cold weather. My latest notes of it in fall are 20th and 21st of December, 1885, when I saw one each day; altitude, 4000 feet. It winters commonly on the San Pedro River, about twelve miles from the point indicated in the Catalinas.

112. *Sayornis nigricans*. BLACK PHŒBE.—Not so common as the last. A regular resident in the valleys about water courses, and a migrant and summer resident in the Catalina Mountains. I first noted its arrival (altitude, 4000 feet) on March 25, 1885, and it remains at this point till cold weather comes on. A number of young birds in the collection were taken in the Catalinas about the middle of July. I noted the bird on the San Pedro River, January 28-30, 1886, when only a few were seen.

113. *Contopus borealis*. OLIVE-SIDED FLYCATCHER.—A rather common spring and fall migrant in the Catalina Mountains, and also noticed once in early August in the Pinal Mountains. I have been unable to ascertain whether it breeds in the Catalinas. In spring in the Catalinas (altitude, 4500 feet), it appears for a few days late in April, and the earliest

fall record is September 2, from which time until about October 1 I constantly met with it. In the pine forests of the Catalinas, though *C. pertinax* was common late in April, I made no record of *C. borealis*.

114. *Contopus pertinax*. COUES'S FLYCATCHER.—Twice during my long stay in the Catalinas I noticed or took this species near my house, and this is the lowest altitude at which I am aware of its occurrence. My records are "837. ♂ juv., 7 September, 1884.;" "April 27, 1885, one seen, altitude 4000 feet."

For detailed notes as to the occurrence of this species in the pine forests of the Catalina Mountains, see my paper in 'The Auk' (Vol. II, No. 4, October, 1885, p. 356), entitled "Early Spring Notes from the Mountains of Southern Arizona."

115. *Contopus richardsoni*. WESTERN WOOD PEWEE.—The following notes in regard to this species are all from the Santa Catalina Mountains, though the bird doubtless occurs throughout the region under consideration. The first noted in spring was April 27, 1885, when two were seen and one other taken, at an altitude of 4500 feet. Became common May 10, 1885. The first nest was noted June 9, 1885; parent sitting on three fresh eggs.

In the fall I found it common in September up to the 29th, in 1884, when it was last seen. Two and occasionally three broods of from one to three young are reared in this locality during the summer.

116. *Empidonax difficilis*. BAIRD'S FLYCATCHER.—I have taken this species in the Catalina Mountains from June 2 to October 28. Most of the specimens taken, however, were collected in September and October, when it is not uncommon.

117. *Empidonax pusillus*. LITTLE FLYCATCHER.—The only specimens of this species obtained are two, taken August 15, 1884, in the Catalina Mountains; one is an adult male, the other a young male.

118. *Empidonax hammondi*. HAMMOND'S FLYCATCHER.—A spring and fall migrant in the Catalina Mountains where all the specimens here recorded were taken. The earliest notes of spring arrival which I have are a single bird (No. 2024) taken March 31, 1885, at an altitude of 4000 feet. The arrival of the birds was general on the 7th of April, and the last seen in spring were taken May 5 and 10, 1885. In fall I have taken the birds at the same point from early in October until the 25th of that month.

119. *Empidonax obscurus*. WRIGHT'S FLYCATCHER.—Of the four specimens of this species taken in the Catalina Mountains (altitude 3500 to 4500 feet) three were taken in May and the other on August 15. I have no data on the distribution of this bird in other parts of Pinal County.

120. *Pyrocephalus rubineus mexicanus*. VERMILION FLYCATCHER.—This was one of the more conspicuous and common species at Riverside during the month of April, 1882, and was also noted there throughout the summer. It is resident about Tucson, and also at Florence, and though it is not common at either point during the winter, I have records of its

occurrence for every month in the year. The representatives at both places during the colder months seem to be large young birds of the year, and generally young males. On the foothills of the Catalina Mountains it is a common migrant, many breeding at the lower altitudes, and a few ranging up to and breeding at an altitude of 4500 feet, which seems to be about the limit of the vertical range. The earliest record of arrival that I have in this region is February 28, 1885, when I took a male in full plumage, at an altitude of a little over 3000 feet. I did not meet with another until March 7 of the same year. On the 12th of March I took a male, the third of the season, and saw another male and the first female of the year. By the 20th of March the arrival seemed to be general, and the birds soon began nesting. On May 1, 1885, they had generally begun building, and a nest examined contained two fresh eggs. On the 4th of May of the same year another nest examined contained three perfectly fresh eggs; and this is the maximum number I have found.

I met with this species at Mineral Creek, in the Pinal Mountains (altitude about 4000 feet), in May, and again in August, but I have not observed it in winter on any of my visits to the valley of the San Pedro River, which is in elevation about the same as Tucson, though further north. The species leaves the foothills of the Catalina Mountains by October 1-10.

121. *Otocoris alpestris chrysolæma*. MEXICAN HORNED LARK.—In the parts of Arizona under consideration I have not met with any Horned Lark very commonly. Mr. Brown found this form about Tucson, particularly in the fall and winter months.

All the Larks that have come under my observation were on the dry mesas, and I have met with them only in the fall and winter, and then sparingly.

122. *Cyanocitta stelleri*. LONG-CRESTED JAY.—The data in regard to this species already presented to the readers of this journal (see Auk Vol. II, 1885, pp. 174, 355) give all that is available as to its permanent residence in the Catalinas. Generally with cold weather many representatives leave the pine woods and descend as low on the foothills as an elevation of 3500 feet. I noticed the birds as generally not uncommon during the winters of 1884-85 and 1885-86 in the oak region, in late December and January. At other seasons they are confined to the pine forests. I saw them commonly in the pines of the Pinal Mountains in October, 1883.

123. *Aphelocoma woodhousei*. WOODHOUSE'S JAY.—A common and resident species at the headwaters of Mineral Creek. Also common in the foothills of the Catalinas, where it breeds. It frequently associates with *A. sieberii arizonæ*, but is not so gregarious as that species. Breeds in late April and May, and I think but one brood is reared. As far as I am able to judge, this species does not range below 3000 nor above 5000 feet in the foothills of the Catalina Mountains. I have not met with it at other points than those indicated in the Pinal and Catalina Mountains.

124. *Aphelocoma sieberii arizonæ*. ARIZONA JAY.—Having discussed

this species at some length in a recent number of 'The Auk' (see Vol. III, January, 1886, pp. 81-83) I refer the reader to that paper. The Catalina region is the only point where I have met the species, where it is very abundant, resident, and breeds, ranging almost coincidentally with the evergreen oak forests.

[Mr. Scott's large series (45 specimens) of this interesting species presents some noteworthy variations. In about one-third the bill, for example, is wholly deep black; most of the others have the base of the lower mandible more or less whitish or flesh-color, the light portion varying from a slight trace at the base to a complete yellowish-white under mandible. This light tint also sometimes includes the edges and base of the upper mandible. This light color is frequently varied with a pinkish shade, as is markedly the case in young birds of the year. The light color of the bill occurs apparently only in fall specimens, but is doubtless a feature of immaturity rather than of season, since many of the dark-billed birds are autumnal specimens.

The color of the interscapular region varies from blue, slightly or scarcely tinged with ashy, to a decided ashy brown, regardless, apparently, of sex, age, or season. The anterior lower surface likewise varies from bluish gray to a brownish or buffy gray.

A bird in nestling plumage (No. 507, July 5, 1884) has the interscapular region dark brownish ash; the head gray, with a very slight cast of blue; breast and sides strongly washed with brownish ash; middle of the throat white.

No. 1290, ♀, Oct. 16, 1884, differs from all the others in having a large area of pure white on the throat, probably due to albinism.—J. A. A.]

125. *Corvus corax sinuatus*. AMERICAN RAVEN.—A common species about Tucson and throughout the region, but I do not think it is more abundant than the following species. I have not found it breeding, but it is present all the year.

126. *Corvus cryptoleucus*. WHITE-NECKED RAVEN.—Almost the same remarks apply to this as to the foregoing. It is common at times about Tucson, and I have frequently noticed it at other points.

127. *Corvus americanus*. AMERICAN CROW.—The first Crows I saw in Arizona were at the head of Mineral Creek, where they were uncommon. I have since seen them in spring and fall on the foothills of the Catalina Mountains in very large flocks. I am not aware of their breeding at any point in the region in question, and have never met the species during the summer months.

128. *Cyanocephalus cyanocephalus*. PIÑON JAY.—The only point where I have met with this species is in the Catalina Mountains, and even here I believe that it can not be considered a regular visitor. The first noted was a flock of about forty, which appeared on the hills near American Flag on the 17th of September, 1884. Again a flock of about the same number was noticed on September 24 of the same year, and three other flocks, some of them much larger, appeared the same day. On the 28th of the same month other large flocks, and a few single birds, were

seen. The birds were very shy and restless, constantly uttered a peculiarly harsh cry, and were in almost incessant motion. The only one procured out of all the birds seen was a young female of the year (No. 951), taken September 29. All through the ensuing month of October flocks of from twenty to several hundred individuals were noted almost daily, but after November 1 the birds began to leave, and by the 10th my notes as to their occurrence cease. This is the only season—part of September, all of October, and part of November, 1884—when I have seen the birds in Arizona. Their range seemed to be limited to the lower part of the evergreen oak belt, for they were not noticed lower than 3000 nor higher than 6000 feet.

129. *Molothrus ater obscurus*. DWARF COWBIRD.—A common species at Riverside in April, 1882. Also not uncommon about Tucson and Florence. At times they were rather plenty in the foothills of the Catalinas, particularly in early spring. Their habits appear to be identical with those of the Cowbird of the East. I have found their eggs in the nest of such species as *Amphispiza bilineata*, and also in the nest of *Icterus cucullatus nelsoni*.

130. *Xanthocephalus xanthocephalus*. YELLOW-HEADED BLACKBIRD.—This is a particularly abundant species about Tucson and Florence in fall, winter, and spring, but I have no notes of its occurrence at any of these points in summer. It is also abundant in the valley of the San Pedro River in the winter; I noted very large flocks there in January, 1886. These birds have the habit of passing in enormous companies, morning and evening, presumably between their feeding and roosting places, and at such times, being at an elevation a little above gunshot, the noise made in flight almost exactly resembles the cry of the Sandhill Crane (*Grus mexicana*) when heard at a short distance.

131. *Agelaius gubernator*. BICOLORED BLACKBIRD.—A common resident. Particularly numerous at the lower elevations along water courses, and about towns during the colder months.

131. *Sturnella magna neglecta*. WESTERN MEADOW LARK.—Resident, but perhaps more abundant in the fall and winter months. I have no records of its occurrence above four thousand feet on the mountains.

133. *Icterus parisorum*. SCOTT'S ORIOLE.—The breeding and general habits of this species I have already discussed at some length in this magazine (Auk, Vol. II, Jan. 1885, pp. 1-7). Since writing that paper, however, I have found that the time of arrival, even in the region there considered, is somewhat earlier than my former observations had led me to think, being first noted March 22, 1885, and becoming common within a week. On the 25th of March I heard a number of males in full song, (altitude, 4500 feet). On the 4th of May, 1885, at an altitude of 4500 feet, I found a nest containing two fresh eggs. On the 9th of May a female (No. 2404) was taken which was in remarkably high plumage, resembling very closely the males when a year or more old, having the head and neck fully as dark as it is in such males.

On May 20, 1885, a nest, at an altitude of a little over 3000 feet, contained

three young about ready to fly. I must so far modify my former views as to state that I find fully as many of the birds breed on the arid plains and mesas, at an altitude between 3000 and 8000 feet, as seek a nesting site near water. I have found them with nests at least six miles from the nearest water that I knew of.

Young taken from the nest when about ready to leave it become very tame and familiar, and one that I took in this way began to sing before a year old, and was so tame as to be allowed the run of the house. It was very intelligent and inquisitive, and would frequently alight on my chin or head and strive to open my lips with its bill, or in the same way my eyes if I closed them.

[The young in nestling plumage are scarcely different in color from young birds in fall plumage.

As noted above, a female in the collection has the throat and breast black, and the whole head blackish, as in ordinary yearling males. There is also another female (No. 2414) which has the throat and breast black, but less intensely so than in the last, while the head is as in the ordinary adult female.—J. A. A.]

134. *Icterus cucullatus nelsoni*. ARIZONA HOODED ORIOLE.—The earliest notes I have of the arrival of this species in spring is March 28, 1885, and in a week they were common. This was in the Catalinas at an altitude of 4000 feet. At the same point a few remain till late in September. The birds are common throughout the area under discussion, are absent from the region as a whole only about four months in the colder part of the year, and range in summer up on the mountain sides to nearly 6000 feet. For a discussion of the breeding habits in detail see Auk, Vol. II, April, 1885, pp. 159-165.

[On comparing Mr. Scott's series of 25 adult males of this newly described form (see Proc. U. S. Nat. Mus., VIII. 19 April, 1885) with a similar series of true *cucullatus* from the Lower Rio Grande, Texas, in Mr. Sennett's collection, the difference in color claimed by Mr. Ridgway for these two forms proves to be well sustained. The palest specimen in Mr. Sennett's series is but little more deeply colored than the brightest examples in the Arizona series, but the average difference is striking and well maintained. The difference, however, seems to be mainly limited to intensity of color, although the Arizona form shows a rather broader edging of white on the remiges and wing-coverts.—J. A. A.]

135. *Icterus bullocki*. BULLOCK'S ORIOLE.—This species, though not uncommon about Tucson and Florence, where it probably breeds rarely, is rare in the Catalina Mountains, where I have met with it but twice, as follows: No. 233, Catalina Mountains, alt. 4500, ♀, May 12, 1884; No. 671, Catalina Mountains, alt. 4500, ♂ juv., July 31, 1884. On the strength of this last record is based the conclusion that the bird sometimes breeds in this region.

136. *Scolecophagus cyanocephalus*. BREWER'S BLACKBIRD.—An abundant winter resident at and about Tucson, Florence, and Riverside; in fact almost anywhere in the region below an altitude of 3000 feet, where

there is suitable food and water. It is very familiar about all the towns and houses during the colder months.

I have observed it but once in the Catalina Mountains—on October 2, 1884, when I took a female (No. 1012), the only one seen, at an altitude of 4500 feet.

(To be continued.)

SOME UNDESCRIBED PLUMAGES OF NORTH AMERICAN BIRDS.

BY GEORGE B. SENNETT.

Sterna fuliginosa. SOOTY TERN.

I HAVE been able to find but one attempt at describing the young of this species while yet in the down, and that description must have applied to older specimens than those before me. In 'The Ibis,' 1868, p. 286, Captain Sperling (whose description is referred to in B. B. & R. Water Birds, Vol. II, p. 314) describes the young as follows: "The young were of a very light sooty color, both above and beneath, the ends of most of the feathers having a white spot the size of a pea, which gives to them a speckled appearance." Saunders, in P. Z. S., 1876, p. 667, says: "The young are dark on the underparts." This indicates his reference to a more advanced stage of growth.

Downy Stage:—Underparts white; throat and sides of neck speckled dark gray and white. The whole upper parts are covered thickly with sooty and white downy tufts, the former tipped with black points and the latter with reddish fulvous points, giving to the whole upper surface a mixed speckled appearance of black, white, and fulvous. In one specimen the dark color predominates and in the other the fulvous.

Aythya collaris. RING-NECKED DUCK.

Downy Stage:—Underparts very pale yellow; forehead and sides of head and neck the same, washed with dark fulvous yellow; the same yellow is on underside of wing and, alternating with brown, covers the side of body. The crown, line down back of neck, wings, and line down tibia to tarsus, whole of centre of back, and spaces between the yellow patches, a rich brown.

Colinus virginianus texanus. TEXAN BOB-WHITE.

First Plumage:—Half grown female, taken Aug. 18, in Texas. Throat and lower belly creamy white; postocular stripe same color barred with brown; crown ashy brown with broad median line of darker brown; auric-

ulars brown. Cervical collar rich brown, white, and fulvous; conspicuous, but not meeting in front. Back light ashy brown with white shaft-lines and tips, and dark brown mottlings toward the ends of the feathers. Coverts and tertiaries strongly marked with patches of dark brown; inner edge fulvous. Wings very light brown, barred, spotted, and tipped with dull white. Tail brownish drab, barred with dull white. There is a fulvous tinge on closed wing, rump, and tip of tail. Jugulum light ashy brown with faint white shaft-lines. The remaining underparts, including tibia, show plainly a barred appearance of yellowish white and brown. Bill and feet yellow.

Callipepla squamata castanogastris. CHESTNUT-BELLIED SCALED
PARTRIDGE.

First Plumage.—In the specimen before me, a male, taken October 29, in Texas, the adult plumage is just coming out, but does not yet conceal the first growth of feathers. The bird, I should judge from the size of skin, the feet, and the bill, to be nearly full grown. Top of head light brown, darker in centre, with only the slightest tinge of the drab or light blue common to adults in fresh plumage. The crest is conspicuous and peculiar, forming two prongs or forks, and is composed of four brownish white feathers about three-quarters of an inch long. These crest feathers correspond to the longest and white-tipped ones of adult, but, unlike them, are not ragged or hairlike, being firmly rounded, nearly as much as the plumes of the common Night Heron. The dark brown coverts (so to speak) of the crest are not conspicuous, being just a little longer than the feathers of the crown and are evidently just growing out. The feathers of back are light brownish drab, without edgings, but with white shaft-lines enlarged at the end. The coverts and scapulars are strongly waved with dark brown and rufous, having heavier white shaft-lines than on the back. The tertiaries have the white shaft-lines and waves only on lower end of feathers; the outer edges being strongly mottled with brown and gray. The wings are plain brown, the longest quills being faintly edged with spots of light fulvous gray. Rump brownish blue; tail dark grayish blue barred and speckled with dark brown and ashy white. Throat light bluish gray; the feathers having small dark centres, thus giving a faintly speckled appearance. Breast dark drab with all the feathers showing white shaft-lines as on back. Belly, crissum, and tibia dingy yellowish white, thickly barred with brown and fulvous. Bill very dark brown above and pale below. Feet yellow.

Catharista atrata. BLACK VULTURE.

Downy Stage.—Entire body densely covered with long silky down of uniform light fulvous color. Throat and lores bare. The whole top of the head is covered with a thick down of two distinct lengths, the longer of which is much shorter than the body down; looking at the head from above, this longer down is seen to grow in such shape as to form a patch having the outlines of a perfect spear-head; the spear-point stands toward

the bird's bill, while the barbs extend backward over each eye, with the shank losing itself down in the nape of the neck. This peculiar form is made distinct not only because the down forming the spear-head is twice as long as the rest of the head-growth, but while the short down of the head is of a dark grayish color, the long down of the spear-head has its edges sharply defined in black shading to a fulvous toward the centre. Bill dark horn color. When the bird is half grown and the quills are just appearing, the down on the head has about disappeared, leaving the whole head black and nearly bare, the very minute and scattered growth of feathers being scarcely noticeable. The down on the body is still as dense as ever and very long. The color of the whole anterior half of the bird has become redder and richer, while the posterior half has become darker. The bill is black throughout. The down is now more than an inch in length, and the bird presents a grotesque appearance, very much as if it had covered its nakedness with a miniature faded buffalo skin over coat.

Parabuteo unicinctus harrisi. HARRIS'S HAWK.

Downy Stage:—All the upper parts uniform light tawny; underparts and lores white with a tawny tinge on jugulum. Bill light brown horn color above and yellowish white below. Just before the feathers appear the down loses most of its tawny color above and the young bird looks much whiter.

First Plumage:—The crown, remiges, long scapulars, and zone of tail deep rich blackish brown with purplish reflections; all the feathers of crown, back, and rump tipped and edged lightly with chestnut. Feathers over eye so broadly edged with light chestnut as to form a superciliary line. Wing-coverts with more extensive and darker chestnut than in adult. Upper and lower tail-coverts and terminal tail-band white tinged with tawny. Throat streaked with black and tawny. Feathers of breast black and tawny, and those of belly black and white. Tibia dark chestnut with narrow bands of fulvous. Feet yellow; claws black; bill dark horn color.

Buteo albicaudatus. WHITE-TAILED HAWK.

I have in my collection six nestlings, taken in Texas, which are very interesting and peculiar. Two of them are two days old, two four days old, one about a week old, and the sixth about half grown, with its quills and first feathers just started.

Downy Stage:—Well covered with cottony down, most dense on head and wings, and thinnest on throat and belly. The color underneath is richer on upper back and wings, shading into brown on back of neck. Whole top of head thickly covered with soft hair-like feathers from half an inch to three-quarters of an inch in length, bristling up individually and showing, when looked at from above, the pale tawny color of their

downy bases. The color of these long hair-like feathers which crown the head is dark brown, almost black, on four of the very young, and lighter brown on one of the specimens, which is the only marked variation among the five youngest. A narrow black band encircles the eye, and the eyelids are jet black. The bill is glossy black above and horn color below. The feet are flesh color, the claws pale in very youngest, and shading into horn brown in the specimen a week old. These interesting young Hawks, with their varying shades of color, and their tall, erect head-tufts, present a most peculiarly pugnacious appearance.

Half-grown young, still in the downy stage, with first feathers just started:—The entire bird is thickly covered with long white down suffused with tawny ash on neck, sides, belly, and rump. On every part of the body feathers have started through the down; they are hardly noticeable on the throat, but plainly seen on head and belly, and most developed on back and wings. All the feathers, excepting primaries, rectrices, and on the jugulum, are very dark brown, almost black, and strongly tipped with rufous on scapulars, wing-coverts, and secondaries, and with tawny mixed with white on other parts. The primaries project an inch from the quill-sheath and are black, tipped almost imperceptibly with white. The rectrices project only half an inch from the quill-sheath, are tipped and edged with white, and are of that hoary ash color so prevalent in full-grown birds of first year. The feathers starting on the jugulum and breast, which can be noticed by parting the down, are tawny. Many of the long, erect, hair-like filaments which crown the head are, with their downy bases, still attached to the new outgrowing feathers and give the youngster a very unkempt appearance. The black bands around the eye and the black of the eyelids have almost disappeared. The bill is now approaching a horn color, having lost its black gloss. The claws are deep blue black.

Polyborus cheriway.—AUDUBON'S CARACARA.

Downy Stage:—Fur-like down fully half an inch in length covering the entire chick; this down is not very thick except on the crown. The color is chiefly light buff shading to cream on throat; dorsal stripe and flanks light brown; a patch of darker brown on shoulder and edge of wing. Crown to middle of eye and nape deep reddish brown. On back and belly, underneath the down, can be seen the dark flecks in the skin containing the embryo feathers.

Chordeiles texensis. TEXAN NIGHTHAWK.

First Plumage:—Remiges and rectrices brown, strongly edged, tipped, spotted, and barred with rufous; no white spot on wings or tail. Feathers of crown, back, wing-coverts and rump, speckled gray, showing a black arrow-tip in lower half and all tipped with fulvous. The only white is a narrow band over eye. Entire underparts gray, strongly suffused with fulvous and covered with narrow dark bars.

Parus atricristatus. BLACK-CRESTED TITMOUSE.

First Plumage:—Upper parts dark ashy plumbeous strongly washed with olive. Lores ashy white. Crest extends to bill, thus leaving no frontlet. On two of my three specimens, which were shot same place and day (Frazar, Rio Grande City, Texas, June 11th, 1880), the crest is mixed dark ash and black, and on the other the crest color is same as back but a darker shade.

I have also a female young of the year taken by Mr. Bourbois at Lomita, Texas, in July of 1879, which has a crest of mixed black and ash, so it is fair to say that in most cases the first plumage has the black crest mixed with ash and without the gloss peculiar to adults. The sides of head and jugulum are dark ashy white. Throat and middle of belly lighter. Sides washed with very pale chestnut, almost a buff, and a wash of same covers upper belly and lower tail-coverts. The quills are edged and tipped with hoary. Bill horn color. Feet plumbeous.

 DESCRIPTIONS OF TWO NEW SUBSPECIES OF
TITMICE FROM TEXAS.

BY GEORGE B. SENNETT.

Parus atricristatus castaneifrons, subsp. nov. CHEST-
NUT-FRONTED TITMOUSE.

♂ ♀. *Adult*:—Entire upper parts plumbeous, washed faintly with olive. Crest thin, about one inch in length, restricted to middle portion of the crown; it is of a dark brown color, mixed on edges with ashy plumbeous; edges of crown and sides of both head and neck ashy plumbeous. Frontlet at base of crest chestnut. Lores white. Underparts light ash, washed with chestnut on sides, and with faint traces of same on breast and under tail-coverts. Tail slightly browner than back; wings browner than tail. Size, that of *Parus bicolor*, but with bill even larger. Bill black. Feet dark lead color.

HABITAT. Bee Co., Texas.

Dimensions:—Adult ♂, type. No. 3106; collector's No. 33; J. M. Priour, Bee Co., Texas, April 4, 1886. Wing, 3.12; tail, 2.95; tarsus, .77; bill, .42.

Adult ♀, type. No. 3107; collector's No. 34; J. M. Priour, Bee Co., Texas, April 4, 1886. Wing, 2.95; tail, 2.95; tarsus, .77; bill, .45.

Adult ♂. No. 3108; collector's No. 66; J. M. Priour, Bee Co., Texas, April 9, 1886. Wing, 3.11; tail, 3.; tarsus, .83; bill, .42.

Adult ♀, No. 3161; collector's No. 67; J. M. Priour, Bee Co., Texas, April 9, 1886. Wing, 3.08; tail, 3.; tarsus, .85; bill, .43.

This dark-crested Titmouse strikes one at a glance as being different from *Parus atricristatus*, on account of its chestnut frontlet, its large size, and its crest being smaller and brown, instead of glossy black. A close comparison shows also less olive on upper parts and a more plumbeous tail. It differs from *Parus bicolor* in having the crest brown instead of dark plumbeous, and the frontlet chestnut instead of black. In size it is fully equal to southern specimens of *Parus bicolor*, and its bill is even larger, and is black, with no tendency to horn color. I have compared the four specimens in my collection with more than fifty specimens of *Parus atricristatus*, and with specimens of *Parus bicolor* from New York to Texas and from Kansas to Florida.

Parus bicolor texensis, subsp. nov. TEXAN TUFTED
TITMOUSE.

♂ ♀, *Adult*.—General color same as in *Parus bicolor* but paler. At base of chest a frontlet of chestnut instead of black as in *Parus bicolor*. This frontlet corresponds in color and intensity to the washings on the sides, which vary with age and season. The size is the same as that of *Parus bicolor*, but the bill appears to be longer and stronger, and the tarsus longer.

Adult ♂, type, No. 3104; collector's No. 52; John M. Priour, Bee Co., Texas, April 7, 1886. Wing, 2.95; tail, 2.85; tarsus, .80; bill, .43.

Adult ♀, type, No. 3105; collector's No. 53; John M. Priour, Bee Co., Texas, April 7, 1886. Wing, 3.10; tail, 3.10; tarsus, .85; bill, .45.

Adult specimen in Coll. of G. N. Lawrence, taken in October by Capt. J. P. McCown, no sex being given. Wing, 3.10; tail, 2.85; tarsus, .82; bill, .45.

HABITAT. Bee Co., Southern Texas; Brownville.

In comparing specimens of *Parus bicolor* from New York, New Jersey, Pennsylvania, North Carolina, South Carolina, Kansas, Florida, and Texas, I am led to believe that the extreme Southern Texas specimens certainly constitute a variety, and may claim the rank of a distinct species. All these specimens from Southern Texas have the distinct russet or chestnut on the frontlet, whether pale or dark, similar to the washings on the sides. In the young of *Parus bicolor* the frontlet is brown, and in some

of the faded adult specimens the black of frontlet runs through all the changes of color from jet black to brown; but nowhere have I seen on the frontlet any chestnut or russet, those tinges of color so peculiar to the side-markings of the *Parus bicolor* and *Parus atricristatus*. In the far western specimens, notably from Missouri (see Baird, B. N. A., 1858, p. 384), the frontlet of *Parus bicolor* is so intensely black as almost to warrant a new variety on that account. Specimens from Middle and Northern Texas and Kansas are fully as black as the Missouri ones. In an almost direct longitudinal line south of where these intensely black ones are found we come to this interesting form with chestnut frontlets.

FURTHER NOTES ON THE GENUS ACANTHIS.

BY LEONHARD STEJNEGER.

SINCE my first paper on the species of the present genus (Auk, 1, 1884, pp. 145-156), the National Museum has accumulated a vast additional material which enables me to corroborate some statements and modify others in my previous paper.

The enormous series of *A. hornemanni*, *exilipes*, *linaria*, and *rostrata* collected by Mr. L. M. Turner at Ungava, near the entrance of Hudson's Bay, has become available, and fully proves the correctness of recognizing the four forms. In fact, I am very strongly inclined to accept Mr. Brewster's view, that *A. rostrata* is specifically distinct. The outline of its culmen is quite unique in the genus. At any rate it is simply absurd to refer *A. rostrata* to *A. hornemanni* in light of our present material.

The increase of the collection of Redpolls is well illustrated by the fact, that while in 1884 we had only one very indifferent specimen of the British *A. cabaret*, the Museum now possesses a series of 41 specimens, most of which are in excellent plumage, for which thanks are due to Messrs. Blakiston, W. E. Brooks, E. Hargitt, R. B. Sharpe, and H. Seebohm. This additional material compels me to recede from the position previously taken, inasmuch as it proves to me the necessity of recognizing *A. cabaret* as a good and valid species, not a mere subspecies, easily

characterized by its brown rump and small size. The characters are uniform and well pronounced, and I can find no true transition to *A. linaria* proper. The specimens have been very carefully measured, the result being given in the subjoined tables which should be compared with the measurements recorded in 'The Auk,' I, 1884, p. 154, and in my 'Ornithological Explorations in Kamtschatka,' 1885, pp. 253-256.

Thanks to the energetic endeavors of Mr. W. E. Brooks, of Milton, Ontario, who, through Mr. Tristram, obtained the loan of an Italian specimen from the Florence Museum, I have been enabled to examine a specimen of the Southern Small Redpoll, which breeds in high altitudes in the South European mountains. I am under great obligations to the gentlemen mentioned for the trouble they have taken.

The specimen in question, a female in autumnal plumage, is more like *A. cabaret* than any of the other Redpolls. It differs, however, from all the British specimens before me in the following points. (It should be remarked that the specimens are fully comparable, as they are nearly all killed in October and November, six of them being marked as females on the labels.) The Italian bird has the brownish color much brighter and more ochraceous than any of the British specimens, the difference being particularly striking on the lower surface. On the other hand, the southern bird has the outer margins of tail-feathers and tertials distinctly whitish and not pale umber brown as the English ones. Mr. Brooks has already in a letter pointed out to me that the flanks of the Italian specimen are more heavily streaked with dusky, and I may add that it has small but distinct dusky streaks quite across the fore neck, a feature only observed in one of the English specimens before me. As will be seen from the appended measurements, the dimensions are about the same, but the bill is decidedly smaller.

As a matter of course, no decision can be made from a single specimen in this difficult group. But I think it important to call attention to the above differences, for the question whether the English and the South European Redpolls are identical, is a very interesting one. I am strongly inclined to think that it will be necessary ultimately to recognize *A. rufescens* (Vieill.) as different from *A. cabaret*. From the list of specimens quoted by Dresser as examined by him (Birds of Europe, IV, p. 50) it is

evident that he had not the opportunity of comparing English and continental specimens.

The Southern Redpoll seems to be a comparatively rare bird, though it must be remarked that the mountain regions of Southern Europe are very imperfectly worked up ornithologically. It breeds, however, in the Alps and Apennines (cf. Auk, 1884, p. 151), and Mr. Giglioli has recently added Friuli as a locality where it has been found nesting (Avifauna Italiana, 1886, p. 37). According to Dresser (Birds of Europe. IV. p. 49), Bailly asserts that it breeds in the Alps of Savoy, and he also gives Adrien Lacroix as the authority for the statement that it is met with *every season* on the northern slopes of the Pyrenees.

When writing my article on *Acanthis* I had no access to the plates of Dresser's 'Birds of Europe,' nor had I any specimens of true *A. exilipes* from the Western Palearctic Region, *i. e.* from Finnmarken and Northern Russia. In the text Dresser stated that he had *A. exilipes* from Tromsø, in Norway. As it seemed impossible to me that Scandinavian ornithologists who distinguished between *A. linaria* proper and *A. l. holbøllii* should have overlooked or ignored so well pronounced a form as *exilipes*, and as I possessed a specimen of a Redpoll from the very same locality, which certainly was not an *exilipes*, but apparently a pale variety of *A. linaria*, I was inclined to think that Dresser did not know the true *exilipes*, and that his birds and mine formed a special race of *linaria*, which should be called *pallenscens*. In all this I was mistaken, however. Mr. Seebohm, with a most praiseworthy generosity, has presented the National Museum with a complete copy of Dresser's grand work, and an inspection of pl. 189, fig. 1, at once showed me that Dresser was quite correct. Specimens afterwards received from Messrs. Seebohm and Brooks, collected at the Petschora and in Siberia, confirm this beyond a doubt, and the habitat of *A. exilipes* is therefore proven to be as completely circumpolar as that of *A. linaria typica*, though more northerly. If the Tromsø birds (which, remarkably enough, is not included in Dresser's list of specimens examined) are identical with the one figured from Petschora, then *A. exilipes* is certainly to be included in the Norwegian Avifauna, and the '*A. canescens*' which Sommerfeldt reported as observed in the autumn at Tanen (cf. Collett, Rem. Orn. North. Norw., Forh. Vid. Selsk. Christiania, 1872, p. 209) is, in all probability, *A. exilipes*. Whether it breeds in Scandi-

navian territory is yet to be discovered. The specimens taken by Wolley at Muonioniska, Lapland, were collected in the autumn, and nothing definitely is said about the Tromsø specimens.

As a consequence Severzow's *A. sibirica* and Homeyer's *A. pallescens* are to be reduced to synonyms of *A. exilipes*. The question then arises, what is to become of my *A. linaria pallescens* (nec Homeyer)? I have again carefully examined my specimen, but what can be said from a single pale Redpoll in worn breeding plumage? All that can be remarked with certainty is that it is not *A. exilipes*, and if it represents no special race of its own, it will have to be unconditionally united with true *A. linaria*. However, even taking into account its very abraded condition, it appears to me *unusually* pale; but future material will decide.

I still maintain that *A. holbællii* is a fair local race of *A. linaria* especially characteristic of islands and coast districts during the breeding season, and easily recognizable by the elongation of the terminal portion of its bill, and the generally larger size. It will not do to explain this difference in the length of the bill as due to season, for we have before us both forms in all plumages and collected in all seasons. True, the bills of these birds are very often worn very short, but that takes place in both forms; specimens of *A. holbællii* with very worn bills may easily be mistaken for typical *A. linaria*, but the latter does not assume such a long bill as *holbællii*.

A good series of specimens from northern Japan, eight of which are collected by Mr. Th. Blakiston, forming part of that magnificent collection which two years ago he with unequalled liberality presented to the National Museum, point very strongly in favor of my opinion. Among the specimens before me are some of those upon which Swinhoe based the statement of two forms occurring in Yesso (*Aegiothus borealis* and *linaria*, Ibis, 1874, p. 160). After carefully examining and comparing my material I have come to the conclusion that they all belong to one form only, viz., *Acanthis linaria holbællii*. Some of the specimens have rather short bills—though longer than the average *A. linaria vera*—but on close examination it will be found that the base of the bill is inclosed in a horny layer of a dead look and ready to scale off, from which the fresh and new but yet short tip is protruding; in other words, they are in the process of shedding the outer layers of the horny covering of the bill. The whole

process is finely illustrated by this series of Japanese birds. It seems as if it is also connected with the change of the color of the bill from yellow to black. As yet the phenomenon of the renewal of the bill has received very little attention from ornithologists, notwithstanding its great importance.

Not knowing of any other species of Redpoll having been assigned to Japan based on *unquestionable* identification I can at present only regard *A. holbællii* as entitled to a place in its fauna. It is reasonable, however, to expect that both *A. linaria* and *exilipes* in winter may visit the northern islands.

MEASUREMENTS.

I. *Acanthis cabaret* ? from Italy.

Florence Museum No.	Collector.	Sex and Age.	LOCALITY.	DATE.	Wing.	Tail-f.	Bill from Nostril.	Furcation of Tail.
2554	♀ ad.	Colico, Italy.	Oct. 19, 1885.	68	51	6.5	9

II. *Acanthis cabaret* from Great Britain.

(a) Males with red on throat and breast.

U.S. Nat. Museum No.	Collector.	Sex and Age.	LOCALITY.	DATE.	Wing.	Tail-f.	Bill from Nostril.	Furcation of Tail.
102976	Swaysland.	♂ ad.	Hove, Sussex.	Oct. 9, 1884.	72	54	7	11
102977	"	♂ ad.	Lancing, "	Nov., 1883.	69	52	7	9
107044	Seebohm.	♂ ad.	Brighton.	Nov., 1880.	67	51	8	8
107047	T. Gunn.	♂ ad.	Heigham, Norwich.	March, 1875.	68	50	7	8
108233	T. Thomps.	♂ ad.	Newcastle-on-Tyne.	Feb. 8, 1873.	71	53	7.5	8
Average measurements of 5 specimens					69	52	7.3	9

(b) Males without red on throat and breast.

102979	Swaysland.	♂ ad.	Brighton.	Nov., 1883.	71	53	7	8
108284	.....	♂ ad.	Oatlands.	Dec. 8, 1875.	73	56	7.5	10
109227	.....	♂ ad.	Cookham.	Dec. 2, 1879.	71	52	7	10
Average measurements of 3 specimens					72	54	7.2	9
Average of 8 ♂♂ with and without red					70	53	7.25	9

(c) FEMALES.

109223	Swaysland.	♀ ad.	Atmouth, Devon.	Oct. 28, 1882.	68	50	7	10
102970	"	♀ ad.	Lancing, Sussex.	Nov., 1883.	66	52	7	9
109224	"	♀ ad.	Atmouth, Devon.	Oct. 28, 1882.	68	51	7	10
107043	Seebohm.	♀ ad.	Norwich.	Nov., 1872.	66	48	7	8
107045	"	♀ ad.	Heigham.	Oct., 1873.	65	51	7	8
108235	.....	♀ ad.	Oatlands.	Dec. 8, 1875.	66	54	7	11
Average measurements of 6 females					66	51	7	9

(d) SPECIMENS NOT SEXED.

(a) With red on throat and breast.

102978	Swaysland.	ad.	Brighton.	Nov., 1883.	71	53	7	10
109225	.....	"	"	Oct., 1883.	74	53	8	—
109226	.....	"	Cookham,	Dec. 29, 1882.	70	53	7.5	9

(b) Without red on throat and breast.

96599	Blakiston.	ad.	Kent.	Oct., 1862.	68	52	7	9
96600	"	"	"	Feb., 1863.	71	52	7.5	8
107045	Seebohm.	"	Brighton.	Nov., 1881.	70	54	7	9
109232	"	"	"	" 1883.	68	52	7	9
109237	"	"	"	"	67	51	7	9
109328	"	"	"	" 1882.	68	53	8	—
109244	"	"	"	"	68	53	7	12
109230	"	"	"	Oct., 1883.	70	54	7.5	10
109231	"	"	"	"	63	—	—	—
109233	"	"	"	"	65	52	7	11
109234	"	"	"	"	68	51	7	10
109235	"	"	"	"	65	49	7	8
109236	"	"	"	"	67	50	7	10
109239	"	"	"	"	65	49	7.5	11
109240	"	"	"	"	68	—	7	—
109241	"	"	"	Oct. 20, 1883.	71	53	7	10
109242	"	"	"	Oct. 22, 1883.	68	53	7	11
100243	"	"	"	Oct. 26, 1883.	66	51	7	11
109245	"	"	Hampstead.	Nov. 12, 1882.	65	51	7	10
109246	"	"	"	Nov. 10, 1882.	97	—	7.5	—
109247	"	"	"	"	70	55	7.5	—
109228	"	"	Cookham.	Dec. 29, 1882.	65	52	7	10
109229	"	"	"	Dec. 2, 1882.	95	—	7	—

Average measurements of 26 specimens 68 52 7.2 10

III. *Acanthis holbællii* from Japan.

(a) MALES.

96374	Blak. 1148.	♂ ad.	Hakodadi, Yesso.	March.	75	58	8.5	8*
91543	" 2910.	♂ ad.	Sapporo, "	June.	72	55	9	8*
96372	" 1147.	♂ ad.	Hakodadi, "	March.	73	55	8	9*
96373	" 1143.	♂ ad.	" "	"	75	58	9	11†
96370	" 1138.	♂ ad.	" "	February.	73	58	8	10†
91439	Jouy, 798.	♂ ad.	Tate Yama, Hondo.	Nov. 21, 1882.	75	58	9	11†

Average dimensions of six males 74 57 8.6 10†

(b) FEMALES.

107039	Blak. 1144.	♀ ad.	Hakodadi, Yesso.	March.	72	55	8	9
91544	" 2911.	♀ ad.	Sapporo, "	June.	—	55	8	—
96344	" 1141.	♀ ad.	Hakodadi, "	March.	72	54	7	9

THE REDISCOVERY OF BACHMAN'S WARBLER,
HELMINTHOPHILA BACHMANI (AUD.),
IN THE UNITED STATES.

BY GEORGE N. LAWRENCE.

MR. CHARLES S. GALBRAITH, of West Hoboken, N. J., an experienced taxidermist and collector, made a collection of birds last spring (1886) in Louisiana, near Lake Pontchartrain. I did not see him after his return until October. Any specimens he obtains, which he is not familiar with, he always thoughtfully

* With red on throat and breast.

† Without red on throat and breast.

retains until he can submit them to me for identification. This time, among others, were two species of especial interest. The most important one, which Mr. Galbraith kindly presented to me, proves to be an example of the rare *Bachman's Warbler*, which for many years has been most assiduously and vainly searched for.

No specimen of it has been obtained in the United States since the types discovered by Dr. Bachman in 1833, near Charleston, S. C., and described by Mr. Audubon. These are now in the National Museum at Washington. A search in the proper locality would probably result in finding more of this rare species, as was the case in Mr. Brewster's persistent pursuit of *Swainson's Warbler*.

The specimen differs from Audubon's plate and description of the male (octavo edition) in having the face light yellow, and the under plumage pale yellow, with a greenish shade, instead of deep gamboge yellow, as in the plate; the black patch on the neck in front and upper part of the breast is just as represented in the plate; the crown, occiput, and hind-neck are bluish ash, with a black band on the anterior part of the crown, about one-quarter of an inch in width; in Audubon's plate of the male, the entire crown is black. In the colors of all the other parts of its plumage, and in its measurements, it agrees with the description given by Mr. Audubon.

Mr. Audubon describes the female as "considerably smaller than the male, and differs only in having the tints fainter, the forehead yellowish-green, and the fore-neck dusky."

In the plate the coloring of the under plumage of the female is of nearly as bright a yellow as in the male.

As the coloring of this specimen was somewhat different from Mr. Audubon's plate, I wrote to Mr. Ridgway, pointing out wherein they differed, and requesting him to let me know whether the male (type) was accurately represented in the plate. He replied as follows: "Your announcement of a specimen of *Bachman's Warbler* from Louisiana is a great surprise to me, as it doubtless will be to ornithologists in general. Your bird corresponds in every particular with the male described and figured by Audubon, which is in our collection. The top of the head is dull ash gray, bordered anteriorly by a black band next to the yellow of the forehead, and the yellow of the face and under-

parts are of a dull yellow shade (oil yellow I would call it), exactly as you describe the specimen in your possession. Audubon's plate is very faulty in several particulars."

Mr. Galbraith obtained only this specimen, and has no recollection of seeing another, but if he had—not knowing its desirability—he said, if a more highly plumaged bird had been in sight, it would have been shot in preference.

The other specimen referred to above is Swainson's Warbler (*Helinaia swainsoni*), of which he procured about three dozen examples, but he had parted with all for millinery purposes, except the one retained for me. The others are probably by this time adorning the hats of some of the better part of creation—the fair wearers not being aware of their great rarity.

It would seem as if this species was not at all uncommon in the locality in which Mr. Galbraith collected, since he got so many specimens of it. He knew nothing of their value, and they were collected indiscriminately with other birds suited to his business as a taxidermist.

According to Mr. Brewster, in South Carolina it required to be very carefully searched for in special localities. With a great variety of birds, Mr. Galbraith obtained a large number of Prothonotary Warblers, as well as Orange-crowned and Worm-eating, showing the locality to be a favorite resort of Swamp Warblers.

THE BIRDS OF THE WEST INDIES, INCLUDING
THE BAHAMA ISLANDS, THE GREATER AND
THE LESSER ANTILLES, EXCEPTING
THE ISLANDS OF TOBAGO
AND TRINIDAD.

BY CHARLES B. CORY.

[Continued from Vol. III, p. 472.]

FAMILY FALCONIDÆ.

GENUS *Pandion* SAV.

Pandion SAVIGNY, "Descr. de l'Egypt, Ois. p. 95, 1809."

Pandion haliaëtus carolinensis (GMEL.). ✓

Falco carolinensis "GMEL. Syst. Nat. I, p. 263 (1788)."

Falco cayennensis "GMEL. Syst. Nat. I, p. 263 (1788)."

Pandion carolinensis GOSSE, Bds. Jam. p. 19 (1847).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 105 (1859) (Bahamas).—BREWER, *ib.* p. 306 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 204 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 152 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 222 (1865); *ib.* J. f. O. 1871, p. 364 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 158 (1878) (Porto Rico); *ib.* J. f. O. 1878, p. 158 (Porto Rico).

Pandion haliaëtus LEMB. Aves Cuba, p. 12 (1850).—LAWR. Pr. U. S. Nat. Mus. I, p. 65 (1878) (Dominica); *ib.* p. 194 (St. Vincent); *ib.* p. 236 (Antigua); *ib.* p. 273 (Grenada).—CORY, Bds. Bahama I. p. 131 (1881).—A. & E. NEWTON, Handb. Jamaica, p. 110 (1881).—CORY. Bds. Haiti & San Domingo, p. 125 (1885).—WELLS, List Bds. Grenada, p. 6 (1886).

Pandion haliaëtus carolinensis CORY, List Bds. W. I. p. 22 (1885).

Common throughout the Bahamas and Antilles.

GENUS *Circus* LACÉP.

Circus LACÉPÈDE, Mém. de l'Inst. III, p. 506, 1801.

Circus hudsonius (LINN.). ✓

Falco hudsonius LINN. Syst. Nat. I, p. 128 (1766).

Circus cyaneus D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 19 (1840).

Circus hudsonicus BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).—CORY, List Bds. W. I. p. 22 (1885).

Circus hudsonius GUNDL. Repert. Fisico-Nat. Cuba, I, p. 224 (1865).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 65 (1867) (Bahamas).—GUNDL. J. f. O. 1871, p. 369 (Cuba).

Circus cyaneus var. *hudsonius* CORY, Bds. Bahama I. p. 128 (1880).

Cuba and Bahamas.

GENUS *Rupornis* KAUP.

Rupornis KAUP, Classif. Säug. u. Vög. 1844.

Rupornis ridgwayi CORY.

Rupornis ridgwayi CORY, Journ. Bost. Zool. Soc. II, p. 46 (1883); *ib.* Auk, I, p. 4 (1884); *ib.* Bds. Haiti & San Domingo, p. 121 (1885); *ib.* List Bds. W. I. p. 22 (1885).

SP. CHAR. *Male*:—Above slaty brown; shafts of the feathers of the head and upper back dark brown; underparts slaty, faintly touched with

rufous on the belly and abdomen; chin dull white; shoulders and thighs rufous, the latter much the brighter, and faintly pencilled with indistinct pale lines; wings and tail dark brown, imperfectly banded with dull white, and showing various shadings of a rufous tinge; all the outer primaries imperfectly banded with white, gradually becoming fainter on the outer webs, until just perceptible on the sixth, the rest of the primaries and secondaries with the outer web dark brown, and the inner webs thickly banded with white, showing traces of rufous.

Length, 13.75; wing, 9.15; tail, 6.; tarsus, 2.75; bill, 1.20.

Female:—Top of the head and neck brownish ash, becoming darker on the back; the feathers of the back and tertiaries edged with rufous; underparts dark rufous, the feathers narrowly banded with white; thighs showing the rufous much brighter, the feathers banded with very fine pale lines; crissum white, with rufous bands near the tips; under part of breast slaty, shading into dull white on the throat; the shafts of the feathers on the throat and breast dark brown, showing in hair-like lines; the rest as in the male.

Length, 14.50; wing 10.; tail, 6.45; tarsus, 2.65; bill, 1.25.

Immature Male:—In general appearance much like *Buteo pennsylvanicus*. Underparts dull white, the feathers slightly tinged with rufous, the centre of the surface feathers showing a stripe of brown, giving the body a striped appearance; thighs rufous, but paler than in the adult; above much resembling the adult; the white wing- and tail-bands replaced by rufous bands on the terminal half of the feathers.

HABITAT. San Domingo.

Mr. Gurney mentions *Rupornis magnirostris* from the Island of Martinique (Ibis, 1876, p. 482), but says that it might have possibly belonged to one or the other of the two Central American forms, which at that time had not been separated from it.

GENUS *Buteo* CUVIER.

Buteo "Cuv. Leç. d'Anat. Comp. I, tabl. ii, Ois. 1799-1880."

Buteo borealis (GMEL.).

Falco borealis GMEL. Syst. Nat. II, p. 226 (1788).

Buteo borealis GOSSE, Bds. Jam. p. 11 (1847).—LEMB. Aves Cuba, p. 18 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 203 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 151 (Jamaica).—GUNDL. Repert. Fisi-co-Nat. Cuba I, p. 223 (1865).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 64 (1867) (Bahamas).—GUNDL. J. f. O. 1871, p. 365 (Cuba); *ib.* 1878, p. 158 (Porto Rico); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p.

159 (1878) (Porto Rico).—CORY, Bds. Bahama I. p. 131 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 110 (1881).—CORY, List Bds. W. I. p. 22 (1885).

Recorded from Cuba, Jamaica, Porto Rico, and Bahamas. Mr. J. H. Gurney writes me he has an example of this species from Haiti.

Buteo latissimus (WILS.). ✓

Falco latissimus WILS. Am. Orn. I, p. 92 (1812).

Buteo latissimus LEMB. Aves Cuba, p. 19 (1850).—CORY, Ibis, 1886, p. 473 (St. Vincent).

Buteo pennsylvanicus BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 223 (1865); *ib.* J. f. O. 1871, p. 366 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 194 (1878) (St. Vincent); *ib.* p. 236 (Antigua); *ib.* p. 273 (Grenada).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 160 (1878) (Porto Rico); *ib.* J. f. O. 1878, p. 158 (Porto Rico).—ALLEN, Bull. Nutt. Orn. Club. V, p. 169 (1880) (Santa Lucia).—LISTER, Ibis. 1880, p. 43 (St. Vincent).—CORY, List Bds. W. I. p. 22 (1885).—WELLS, List Bds. Grenada, p. 6 (1886).

Common winter visitant, and possible resident in the Lesser Antilles.

Recorded from Cuba, Porto Rico, and Lesser Antilles.

GENUS *Accipiter* BRISS.

Accipiter BRISSON. Orn. I, p. 310. 1760.

Accipiter gundlachi LAWR. ✓

Astur cooperi LEMB. Aves Cuba, p. 17 (1850).—CAB. J. f. O. 1854.

Nisus pileatus LEMB. Aves Cuba, Suppl. p. 125 (1850).

Accipiter cooperi BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).

Accipiter pileatus BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (?)

Accipiter mexicanus BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).

Accipiter gundlachi LAWR. Ann. Lyc. N. Y. 1862, p. 252.—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 224 (1865).—SCL. & SALV. Nom Avium Neotr. p. 120 (1873).—SHARPE, Cat. Bds. Brit. Mus. I, p. 137 (1874).—CORY, List Bds. W. I. p. 22 (1885).

Cooperastur gundlachi GRAY, Handl. Bds. I, p. 33 (1869).

Nisus cooperi var. *gundlachi* BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 22 (1874).

Nisus gundlachi RIDGW. Studies Am. Falc. p. 104 (1876).

“*Adult male*:—Front, crown, and occiput sooty-black; upper plumage dull bluish ash, the feathers of the back with brownish

margins; tail of the same color as the back, partly tinged with dull rufous and crossed with four brown bars, three of which are imperfect, being but little developed on the outer webs, the outer bar, however, crosses both webs, and is narrowly tipped with white; quill feathers brown, having the shafts, as are also those of the tail-feathers, reddish brown; cheeks dusky ash; space forward of the eye pale dull rufous; a line of whitish feathers runs along the edge of the crown and extends over the eye; throat ashy white tinged with rufous; sides of the neck, upper part of the breast and a band running to the hind neck, grayish ash; lower portion of the breast and upper part of the abdomen rufous, the feathers very narrowly edged with dull white, lower part of abdomen of a paler rufous, with transverse bars of dull white; long feathers of the sides grayish ash tinged with rufous and destitute of bars or spots; sides just above the junction of the tail plain rufous; thighs of a bright but rather pale rufous, the feathers having darker sub-marginal ends, terminating with very narrow edgings of dull white; under wing-coverts and axillars bright rufous barred with white; the feathers of the throat, breast and sides have their shafts dark brown; upper tail-coverts grayish ash, lower white; bill horn color, with a whitish mark on the tooth and also on the edge of the lower mandible near its base; legs greenish yellow.

“Length about 18 inches; wing from flexure $9\frac{3}{4}$; tail $7\frac{3}{4}$; tarsus $2\frac{3}{4}$.”
(LAWR., orig. descr., l. c.)

HABITAT. Cuba.

Accipiter fringilloides VIG. ✓

- Accipiter fringilloides* VIG. Zool. Journ. III, p. 434 (1828).—DENNY, P. Z. S. 1847, p. 38.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).—GRAY, Handl. Bds. I, p. 32 (1869).—GUNDL. J. f. O. 1871, p. 368.—SCL. & SALV. Nom. Avium Neotr. p. 120 (1873).—SHARPE, Cat. Bds. Brit. Mus. I, p. 135 (1874).—CORY, Bds. Haiti & San Domingo, p. 120 (1885); *ib.* List Bds. W. I. p. 22 (1885).
- Nisus fringilloides* D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 18 (1840).—LEMB. Aves Cuba, p. 128 (1850).—RIDGW. Studies Am. Falc. p. 117 (1876).
- Nisus fuscus* LEMB. Aves Cuba, p. 128 (1850).—GUNDL. J. f. O. 1854.—CORY, Bull. Nutt. Orn. Club, VI, p. 154 (1881).
- Accipiter fuscus* BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).
- Nisus fuscus* var *fringilloides* BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 223 (1874).

SP. CHAR. *Female*.—Resembles *Accipiter fuscus*, but plumage much paler; above brown, the concealed portions of the feathers showing much white; concealed feathers of the back regularly marked with broad spots of white; tail pale brown, showing five somewhat indistinct

bands of darker brown; under surface of tail dull white, regularly banded with brown; breast and belly white, the shafts of the feathers dark brown, showing hair-like lines over the whole surface; these lines are in many cases bordered with pale brown, giving the appearance of arrow-shaped markings; under tail-coverts white; quills brown, barred with white on the inner webs; under surface of wings white, barred with brown.

Length, 11.50; wing 7.; tail, 5.50; tarsus, 1.75.

HABITAT. Cuba, Haiti, and San Domingo.

Dr. Gundlach has a fine adult male of this species in his collection. It is smaller than the female, as would be expected, and has the cheeks and sides of the throat tinged a beautiful orange brown, the color also showing in the breast marking.

The female described was killed a few miles from Port au Prince, Haiti, during March, 1881. It was the only one seen.

Accipiter velox (WILS.).

Falco velox "WILS. Am. Orn. V, p. 116 (1812)."

Accipiter fuscus BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 105 (1859) (Bahamas).—CORY, Bds. Bahama I. p. 128 (1880); *ib.* List Bds. W. I. p. 22 (1885).

Accidental in the Bahamas.

GENUS *Urubitinga* LESS.

Urubitinga LESSON, Rev. Zool. 1839, p. 132.

Urubitinga anthracina (LICHT.). ✓

Falco anthracinus LICHT. in Mus. Berol. undè Nitzsch. Pteryl. p. 83 (1840).

Morphnus urubitinga LEMB. Aves Cuba, p. 14 (1850).—ALBRECHT, J. f. O. 1862, p. 204 (Jamaica).

Hypomorphus gundlachi BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).

Hypomorphnus gundlachi GUNDL. Repert. Físico-Nat. Cuba, I, p. 223 (1865); *ib.* J. f. O. 1871, p. 365 (Cuba).

Urubitinga anthracina SHARPE, Cat. Bds. Brit. Mus. I, p. 215 (1874) (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 194 (1878) (St. Vincent).—LISTER, Ibis, 1880, p. 43 (St. Vincent).—CORY, List Bds. W. I. p. 22 (1885).—WELLS, List Bds. Grenada, p. 6 (1886) (?) —CORY, Ibis, 1886, p. 473 (St. Vincent).

Records from Cuba, Jamaica, St. Vincent, and Grenada (?)

GENUS *Falco* LINN.

Falco LINNÆUS, Syst. Nat. I, p. 124, 1766.

Falco peregrinus anatum (BONAP.) ✓

Falco anatum BP. Geog. & Comp. List, p. 4 (1834).—GOSSE, Bds. Jam. p. 16 (1847).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 105 (1859) (Bahamas); *ib.* BREWER, p. 306 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 204 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, pp. 152, 304 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 225 (1865); *ib.* J. f. O. 1871, p. 371 (Cuba); *ib.* 1878, p. 158 (Porto Rico); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 161 (1878) (Porto Rico).

Falco peregrinus LEMB. Aves Cuba, p. II (1850).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 64 (1867) (Bahamas).—A. & E. NEWTON, Handb. Jamaica, p. 110 (1881).—CORY, List Bds. W. I. p. 22 (1885).

Falco communis SUNDEV. Oefv. Af. K. Vet. Akad. För. 1869, p. 586 (St. Bartholomew).—CORY, Bds. Bahama I. p. 129 (1880).

Falco communis var. *anatum* LAWR. Pr. U. S. Nat. Mus. I, p. 487 (1878) (Antigua); *ib.* p. 240 (Barbuda).

Many records from the Antilles; specimens have been taken in the Bahamas, Cuba, Jamaica, Antigua, Barbuda, Porto Rico, and St. Bartholomew.

Falco columbarius LINN. ✓

Falco columbarius LINN. Syst. Nat. I, 10th ed. p. 90 (1758); *ib.* 12th ed. p. 128 (1766).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 23 (1840).—GOSSE, Bds. Jam. p. 17 (1847).—SUNDEV. Oefv. Af. K. Vet. Akad. För. 1869, p. 601 (Porto Rico).—A. & E. NEWTON, Handb. Jamaica, p. 110 (1881).—CORY, Bds. Haiti & San Domingo, p. 123 (1885); *ib.* List Bds. W. I. p. 22 (1885).

Hypotriorchis columbarius BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).—SCL. P. Z. S. 1861, p. 79 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 203 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 152 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 225 (1865); *ib.* J. f. O. 1871, p. 372 (Cuba); *ib.* 1878, p. 158 (Porto Rico); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 162 (1878) (Porto Rico).

Æsalon columbarius WELLS, List Bds. Grenada, p. 6 (1886).

Recorded from San Domingo, Porto Rico, Cuba, Jamaica, Grenada, and St. Thomas.

Falco sparverius LINN.

Falco sparverius LINN. Syst. Nat. I, 10th ed. p. 90 (1758); *ib.* 12th ed. p. 128 (1766).—GMEL. Syst. Nat. I, p. 284 (1788).—LATH. Ind. Orn.

- p. 42 (1790).—VIEILL. Enc. Méth. III, p. 1234 (1820).—WAGL. Isis, 1831, p. 517.—AUD. Bds. Am. I, p. 94 (1839).—CASSIN, in Baird's Bds. N. Am. p. 13 (1860).—SALV. P. Z. S. 1867, p. 158.—SUNDEV. Oefv. Af. K. Vet. Akad. För. 1869, p. 586.—SCHLEG. Rev. Accipitr. p. 45 (1873).—COUES, Key N. Am. Bds. p. 537 (1884).—CORY, Bds. Bahama I. p. 103 (1880); *ib.* List Bds. W. I. p. 22 (1885).
- Falco noveboracensis* GMEL. Syst. Nat. I, p. 284 (1788).
- Tinnunculus sparverius* VIEILL. Ois. Am. Sept. pls. XII. XIII (1807).—BP. Consp. I, p. 27 (1850).—CASSIN, Pr. Acad. Nat. Sci. Phila. 1855, p. 278.—STRICKL. Orn. Syn. I, p. 99 (1855).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 105 (1859); *ib.* BREWER, p. 306 (1860).—SCL. & SALV. Nom. Avium Neotr. p. 121 (1873).—GUNDL. J. f. O. 1878, p. 158 (?).—GURNEY, List Bds. Prey, p. 98 (1884).—WELLS, List Bds. Grenada, p. 6 (1886).
- Cerchneis sparverius* BP. List Eur. & N. Am. Bds. p. 5 (1838).
- Falco isabellinus* SWAINS. An. Menag. p. 281 (1838).
- Tinnunculus phalena* LESS. Mam. et Ois. p. 178 (1847).
- Pacilonis sparverius* KAUP, Mon. Falc. Cont. Orn. p. 53 (1850).—GRAY, Handl. Bds. I. p. 23 (1869).
- Tinnunculus sparverius* var. *isabellinus* RIDGW. Pr. Acad. Nat. Sci. Phila. 1870, p. 149.—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 171 (1874).
- Cerchneis sparveria* SHARPE, Cat. Bds. Brit. Mus. I, p. 437 (1874).
- Cerchneis isabellina* SHARPE, Cat. Bds. Brit. Mus. I, p. 441 (1874).
- Falco (Tinnunculus) sparverius* BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 169 (1874).
- Tinnunculus isabellinus* GURNEY, Ibis, 1881, p. 561; *ib.* List Bds. Prey, p. 99 (1884).
- Falco sparverius isabellinus* COUES, Key N. Am. Bds. p. 538 (1884).

Several forms of this species occur in the West Indies, but vary much in different localities. I have a specimen in my cabinet from San Domingo which is apparently true *F. sparverius*.

Falco dominicensis GMEL.

- Falco dominicensis* GMEL. Syst. Nat. I, p. 288 (1788).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 90 (1866).
- Falco sparverius* D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 25 (1840).—SALLÉ, P. Z. S. 1857, p. 231.—SUNDEV. Oefv. Af. K. Vet. Akad. För. 1869, p. 586.
- Tinnunculus dominicensis* STRICKL. Orn. Syn. p. 100 (1855).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).—GUNDL. Repert. Fisco-Nat. Cuba, I, p. 225 (1865).—GRAY, Handl. Bds. I, p. 24 (1869).—GUNDL. J. f. O. 1871, p. 373; *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 163 (1878).—GURNEY, List Bds. Prey, p. 99 (1884).
- Tinnunculus sparverius* CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 374.

- Falco leucophrys* RIDGW. Pr. Acad. Nat. Sci. Phila. 1870, p. 147.
Tinnunculus leucophrys RIDGW. Pr. Acad. Nat. Sci. Phila. 1870, p. 149.—
 SCL. & SALV. Nom. Avium Neotr. p. 121 (1873).—BD. BWR. &
 RIDGW. Hist. N. Am. Bds. III, p. 161 (1874).
Tinnunculus sparverius var. *dominicensis* RIDGW. Pr. Acad. Nat. Sci.
 Phila. 1870, p. 149.
Cerchneis leucophrys SHARPE, Cat. Bds. Brit. Mus I, p. 442 (1874).
Falco sparverius var. *dominicensis* BD. BWR. & RIDGW. Hist. N. Am. Bds.
 III, p. 167 (1874).
Tinnunculus sparverius (?) CORY, Bull. Nutt. Orn. Club, VI, p. 154 (1881).
Falco sparverius isabellinus CORY, Bds. Haiti & San Domingo, p. 124
 (1875).
Falco sparverius dominicensis CORY, List Bds. W. I. p. 22 (1884).

SP. CHAR. *Male*:—Top of head slate color; forehead whitish; throat white; a maxillary and auricular black stripe; breast rufous; back dark rufous brown; tail rufous brown, tipped with white, and having a sub-terminal band of black; outer web of outer tail-feather white; wing-coverts slate color; abdomen and belly white; a patch of black on the side of the neck.

Female:—Top of head slate color, showing a patch of rufous; entire upper parts rufous brown, banded with dull black; underparts very pale rufous, delicately streaked and spotted with brown; throat white.

Length, 10.; wing, 7.; tail, 5. tarsus, 1.20.

HABITAT. Cuba? Haiti, San Domingo, and Porto Rico.

Falco sparverioides VIG. ✓

- Falco sparverioides* VIG. Zool. Journ. III, p. 436 (1828).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 30 (1840).—RIDGW. Pr. Acad. Nat. Sci. Phila. 1870, p. 149.—COUES, Key N. Am. Bds. p. 538 (1884).
Tinnunculus sparverioides GRAY, Gen. Bds. I, p. 21 (1844).—BP. Consp. I, p. 27 (1850).—STRICKL. Orn. Syn. p. 100 (1855).—LAWR. Ann. Lyc. N. Y. 1860, p. 247.—BREWER, Pr. Bost. Soc. Nat. Hist. VIII, p. 306 (1860).—SCL. & SALV. Nom. Avium Neotr. p. 121 (1873).—GURNEY, Ibis, 1881, p. 565; *ib.* List Bds. Prey, p. 100 (1884).
Pecilornis sparverioides KAUP, Contr. Orn. p. 53 (1850).—BP. Rev. Mag. Zool. 1854, p. 537.—GRAY, Handl. Bds. I, p. 24 (1869).
Cerchneis sparverioides SHARPE, Cat. Bds. Brit. Mus. I, p. 443 (1874).
Falco (Tinnunculus) sparverioides BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 162 (1874).
Falco sparverius sparverioides CORY, List Bds. W. I. p. 22 (1885).

SP. CHAR. *Male*:—Above entirely slate blue in the adult bird; most specimens seen have the back chestnut brown mixed with slaty; rump, upper tail-coverts, and tail chestnut brown; tail with a sub-terminal

band of black; inner secondaries gray; sides of the face and throat white; a streak of black on sides of throat; slight mark on the nape and a patch near the ear-coverts black: breast pale chestnut, and becoming whitish, tinged with chestnut on the belly and vent; flanks showing a grayish tinge, and a few faint black spots.

Length (skin), about 10; wing, 6.50; tail, 4.70; tarsus, 1.50; bill, .60.

HABITAT. Cuba.

Falco caribbæarum Gmel.

Falco caribbæarum Gmel. Syst. Nat. I. p. 284 (1788).

Falco asalon. var. β . LATH. Ind. Orn. I, p. 49 (1790).

Cerchneis caribbæarum (?) SHARPE, Cat. Bds. Brit. Mus. I, p. 442 (1874).

Tinnunculus sparverius var. *antillarum* LAWR. Pr. U. S. Nat. Mus. I, p.

487 (1878).—ALLEN, Bull. Nutt. Orn. Club. V, p. 169 (1880).

Tinnunculus antillarum GURNEY, Ibis, 1881, p. 547.

Tinnunculus caribbæarum GRISDALE, Ibis, 1882, p. 491.—GURNEY, List Bds. Prey, p. 99 (1884).—RIDGW. Pr. U. S. Nat. Mus. VII, p. 172 (1884).

Falco sparverius caribbæarum CORY, List Bds. W. I. p. 22 (1885); *ib.* Ibis, 1886, p. 474.

Sp. CHAR. *Male*.—General plumage above chestnut brown, heavily banded with black; forehead grayish; top of head chestnut brown, showing faint lines of black; underparts dull white, tinged with rufous on the breast, and spotted and streaked with black, heaviest on the sides of the body; primaries heavily blotched with white on the inner webs; under surface of tail brown, showing numerous bands of black, a wide subterminal band of black, and narrowly tipped with grayish white.

Length (skin) 9.50; wing, 6; tail, 4.50; tarsus, 1; bill .55.

HABITAT. Lesser Antilles.

GENUS *Elanoides* VIEILL.

Elanoides "VIEILLOT, Nouv. Dict. XXIV, p. 101, 1818. Type *Falco furcatus* = *F. forficatus* LINN."

Elanoides forficatus (LINN.). ✓

Falco forficatus LINN. Syst. Nat. I, p. 89 (1758).

Nauclerus furcatus GOSSE, Bds. Jam. p. 19 (1847).—BREWER, Pr. Bost.

Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).—ALBRECHT, J. f. O.

1862, p. 204 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863,

p. 153 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 225

(1865); *ib.* J. f. O. 1871, p. 370 (Cuba).—A. & E. NEWTON, Handb.

Jamaica, p. 110 (1881).

Elanoides forficatus CORY, List Bds. W. I. p. 22 (1885).

Recorded from Cuba and Jamaica.

GENUS *Rostrhamus* LESS.

Rostrhamus LESSON, *Traité d'Orn.* p. 55, 1831.

Rostrhamus sociabilis (VIEILL.) ✓

Herpetotherus sociabilis VIEILL. *Nouv. Dict.* XVIII, p. 318 (1818).

Rostrhamus sociabilis D'ORB. in La Sagra's *Hist. Nat. Cuba*, Ois. p. 15 (1840).—BREWER, *Pr. Bost. Soc. Nat. Hist.* VII, p. 306 (1860) (Cuba).—GUNDL. *Repert. Fisico-Nat. Cuba*, I, p. 222 (1865); *ib.* J. f. O. 1871, p. 362 (Cuba).

Rostrhamus hamatus BREWER, *Pr. Bost. Soc. Nat. Hist.* VII, p. 306 (1860) (Cuba).

Rostrhamus sociabilis CORY, *List Bds. W. I.* p. 22 (1885).

Accidental in Cuba.

GENUS *Regerhinus* KAUP.

Regerhinus KAUP, *Mus. Senck.* III, p. 262, 1845.

Regerhinus wilsonii (CASS.) ✓

Cymindis wilsonii CASSIN, *Journ. Acad. Nat. Sci. Phila.* new ser. I, p. 21, pl. vii (1847).—BP. *Consp.* I, p. 21 (1850).—LAWR. *Ann. Lyc. N. Y.* VII, p. 257 (1860).—SCL. & SALV. *Nom. Avium Neotr.* p. 122 (1873).

Regerhinus wilsonii KAUP, *Arch. f. Naturg.* 1850, p. 40.—BREWER, *Pr. Bost. Soc. Nat. Hist.* VII, p. 306 (1860).—GUNDL. J. f. O. 1871, p. 360.—RIDGW. *Studies Am. Falc.* p. 159 (1876).—CORY, *List Bds. W. I.* p. 23 (1885).

Cymindis uncinatus LEMB. *Aves Cuba*, *Suppl.* (1850).—BREWER, *Pr. Bost. Soc. Nat. Hist.* VII, p. 306 (1860).

Regerhinus uncinatus CAB. J. f. O. 1854, p. 80.

Regerhinus wilsoni GRAY, *Handl. Bds.* I, p. 28 (1869).

Leptodon wilsoni SHARPE, *Cat. Bds. Brit. Mus.* I, p. 333 (1874).

“*Male*:—Body above entirely dark brown, paler on the head; beneath white, every feather from the chin to the under tail-coverts crossed by several bars of bright rufous, and these colours extending upwards into a collar around the neck; 4th, 5th, and 6th primaries longest and nearly equal, external webs nearly black, internal webs of outer primaries white at base, and for nearly half their length, remaining part reddish inclining to chestnut, every primary (on its inner web) having two irregularly shaped black marks, and tipped with black. Tail of the same colour as the back, but paler, white at base, and crossed by about four broad bars, which are nearly black, the second bar from the tip accompanied by a narrow rather indistinct bar of rufous; tip of tail narrowly edged with white. Bill very large, larger than that of any other species of

this genus, yellowish white, inclining to bluish horn-colour at base. Total length 17 inches.

"*Female*:—Body above entirely light bluish ash-colour, paler on the head, beneath barred with the same, the bars having a ferruginous tinge" (CASSIN, l. c.).

HABITAT. Cuba.

Regerhinus uncinatus (TEMME.).

Falco uncinatus TEMME. Pl. Col. 103, 104, 105 (1824).

Cymindis uncinatus LESS. Man. d'Orn. I, p. 91 (1828).—GRAY, Gen. Bds. I, p. 25 (1844).—BP. Consp. I, p. 21 (1850).—BURM. Th. Bras. II, p. 108 (1856).—LÉOT. Ois. Trinid. p. 36 (1866).—GRAY, Handl. Bds. I, p. 136 (1869).—PELZ. Orn. Bras. pp. 5, 398 (1871).—SCHLEG. Rev. Accipitr. p. 136 (1873).—SHARPE, P. Z. S. 1873, p. 419.—SCL. & SALV. Nom. Avium Neotr. p. 122 (1873).—WELLS, List Bds. Grenada, p. 6 (1886).

Falco vitticaudus MAX. Beitr. III, p. 178 (1830).

Cymindis cuculoides SWAINSON, Classif. Bds. II, p. 209 (1837).

Regerhinus uncinatus KAUP, Mus. Senckenb. III, p. 262 (1845).—CAB. in Schomb. Reis. Guian. III, p. 736 (1848).—GUNDEL. J. f. O. 1871, p. 284.—CORY, List Bds. W. I. p. 23 (1885).

Rostrhamus uncinatus STRICKLAND, Orn. Syn. p. 136 (1855).

Cymindis pucherani LÉOT. Ois. Trinid. p. 40 (1866).—GRAY, Handl. Bds. I, p. 25 (1869).—FINSCH, P. Z. S. 1870, p. 557.

Cymindis boliviensis BURM. P. Z. S. 1868, p. 635.—GRAY, Handl. Bds. I, p. 28 (1869).

Cymindis vitticaudus PELZ. Orn. Bras. pp. 6, 398 (1871).

Leptodon uncinatus SHARPE, Cat. Bds. Brit. Mus. I, p. 330 (1874).

"*Young*:—Above brown, the dorsal feathers and wing-coverts margined with pale rufous, the upper tail-coverts broadly barred and tipped with buff; quills dark brown, with rufous-buff tips, the primaries barred with dark brown above, the secondaries more or less distinctly barred with rufous or rufous buff; the under surface of the wing ashy brown, barred with darker brown, the bases of the feathers creamy buff, washed with rufous near the tips; tail ashy brown, tipped with whitish, barred across with dark brown bars, the interspaces on the inner web creamy buff, more or less mottled with brown above, at the base barred above and below with creamy buff, like the upper tail-coverts; crown of the head dark brown, with no pale margins; sides of the face and a collar around the neck white, slightly spotted with pale brown, the ear-coverts inclining to bluish grey; under surface of body white, the throat indistinctly spotted, and the breast narrowly barred with pale brown, the bars almost linear on the under tail-coverts, those on the

thigh-feathers broader and more rufous; under wing-coverts and axillaries white, barred with pale rufous. Total length 17 inches, culmen 1-65, wing 10-4, tail 8-6, tarsus 1-45.

"Another specimen still quite young, agrees with the foregoing in the coloration of the wings and tail, but has the edgings to the feathers of the upper surface very much broader, and a broad white tip to the tail; the sides of the face and collar round the neck are creamy white, without any brown spots; the under surface of the body is also more free from spots, with here and there a feather appearing broadly barred with tawny rufous, indicative of the next change in the plumage.

"*Mature*:—Altogether different from the preceding stage. Above leaden brown, the head more slaty, the sides of the face and chin clear slaty blue; around the neck a rufous collar; quills brown, with narrow apical margins of pale rufous or buffy white, the outer secondaries rufous for nearly their whole extent, the under surface of the wing greyish, creamy white near the base, all the quills barred above and below with blackish brown; tail ashy grey, crossed by two very broad bars of black, tipped with creamy white, before which an indistinct subterminal line of ashy grey is visible, some of the outer upper tail-coverts and base of tail slightly mottled with whitish; under surface of body tawny rufous, crossed with broad bars of ochraceous buff, the under wing-coverts similarly marked, the lower ones ochraceous buff, with greyish black cross-bars.

"The next change seems to be in the undersurface, where the ochre-coloured become quite white, and whitish bars appear on the grey throat. From this stage (to judge by our specimens) it changes by a partial moult, and by a gradual change of feather at the same time; for the bars on the breast lose by degrees their rufous tint and become grey, while the back also becomes slaty grey instead of brown; the nuchal collar gradually disappears. This gradual development seems to be satisfactorily traced, with the exception of the tail, which, instead of agreeing with that of the rufous or "mature" stage, has four rather narrow black bars, like the young specimen first described. This can only be accounted for by the fact that Hawks have really no fixed laws of change in plumage, and that it is impossible for anyone to define exactly the regular sequence of the variations. No two birds are exactly alike; for one has the head more advanced, another the tail, vice versa. Thus the bird last noticed as donning his grey dress is very far advanced as regards his body-plumage, but has not moulted his tail, whereas those in the rufous dress are not so forward in their body-plumage, but have already the tail of the adult (one being in the act of moulting).

"*Adult female*:—Slaty blue above and below; no trace of a nuchal collar; under surface narrowly but irregularly barred with white,

the under tail-coverts clear buff; under wing-coverts grey, thickly barred with buffy white; quills blackish, shaded with slaty grey above, the secondaries entirely of this colour, the under surface greyish white, with black bars and tips, less conspicuous on the upper surface; tail alternately crossed with two bands of black above, with a broad intermediate band of ashy grey between, narrowly tipped with ashy grey, barred with ochraceous buff and black below, the bars very broad. Total length 17 inches, culmen 1.6, wing 11.7, tail 7.5, tarsus 1.4.

“*Adult Male*:—A little smaller than the female. Total length 16 inches, culmen 1.55, wing 11, tail 7.5, tarsus 1.4.” (SHARPE, l. c.)

I have quoted Mr. Sharpe's admirable description of this species in full; as the series of specimens at my command is totally inadequate to enable me to properly describe the various stages of plumage.

The bird is recorded from Grenada, and is probably accidental in the Antilles.

GENUS *Polyborus* VIEILL.

Polyborus VIEILLOT, Analyse, p. 22, 1816.

Polyborus cheriway (JACQ.). ✓

Falco cheriway JACQ. Beitr. p. 17, tab. 4 (1784).

Polyborus vulgaris D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 9 (1840).

—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).

Polyborus tharus BREWER, Pr. Bost. Soc. Nat. Hist. VIII, p. 306 (1860) (Cuba).—GUNDL. Repert. Físico-Nat. Cuba, I, p. 221 (1865).

Polyborus cheriway BREWER, Pr. Bost. Soc. Nat. Hist. VIII, p. 306 (1860) (Cuba).—GUNDL. J. f. O. 1871, p. 284 (Cuba).—CORY, List Bds. W. I. p. 23 (1885).

Polyborus brasiliensis BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).

Polyborus auduboni GUNDL. J. f. O. 1871, p. 357 (Cuba) (?).

Accidental in Cuba.

FAMILY CATHARTIDÆ.

GENUS *Cathartes* ILLIGER.

Cathartes ILLIGER, Prodr. p. 236, 1811.

Cathartes aura (LINN.). ✓

Vultur aura LINN. Syst. Nat. I, p. 86 (1758).

Cathartes aura D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 4 (1840).—

GOSSE, Bds. Jam. p. 1 (1847).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 104 (1859) (Bahamas); *ib.* BREWER, p. 306 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 203 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 150 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 221 (1865); *ib.* J. f. O. 1871, p. 253 (Cuba).—CORY, Bds. Bahama I. p. 134 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 111 (1881).—CORY, List Bds. W. I. p. 23 (1885).

Recorded from the Bahamas, Cuba, and Jamaica.

GENUS *Catharista* VIEILL.

Catharista VIEILLOT, Analyse, p. 21, 1816.

Catharista atrata (BARTR.).

Vultur atratus BARTR. Trav. Car. p. 285 (1792).

Cathartes atratus MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 151 (Jamaica).—A. & E. NEWTON, Handb. Jamaica, p. 111 (1881).

Catharista atrata CORY, List Bds. W. I. p. 23 (1885).

This species is claimed to have occurred in Jamaica. No other West Indian record.



THE SENSE OF SMELL IN CATHARTES AURA.

BY IRA SAYLES.

IN the 'Standard Natural History,' edited by John Sterling Kingsley, published by S. E. Cassin & Co., Boston, Vol. IV, p. 271, in an article written by Walter B. Barrows, I read as follows:

"The name condor, Humboldt says, is from a word in the language of the Incas, signifying to smell," and adds: "There is nothing more astonishing than the almost inconceivable sagacity with which the condor distinguishes the odor of flesh from an immense distance."

Mr. Barrows then adds: "This belief in the extraordinary power of smell possessed by carrion vultures is largely an inherited or traditional one, and was long ago shown to be without foundation. That they have some smell is well known, and Owen has even shown that in the turkey buzzard the olfactory nerves

are highly developed. Recognizing this fact in the anatomy of the bird, there is yet very little evidence that the power is ever used in the detection of food."

He proceeds by referring to experiments made by Audubon, Bachman, and Darwin.

Audubon's experiments:—"The perfectly dry, stuffed skin of a common deer, placed in the attitude of death, attracted a vulture [*Cathartes atratus*] within a few moments, though there was nothing eatable about it; after satisfying itself of which, by walking over it and tugging at it, the bird circled about over the field until it espied a small snake, not thicker than a man's finger, upon which it at once pounced. Moreover, a large and putrid carcass of a hog carefully covered by canes and brush so as to be invisible, remained undiscovered by the vultures in spite of the intolerable stench it sent out, though they frequently passed by accident quite near it, and the dogs at once discovered it. Yet a small, freshly-killed pig hidden near the same place was at once traced out by the vultures, by the blood which was allowed to run from it as it was carried to its hiding place."

"Bachman tried these tests, and added some new and perfectly convincing ones. The rough painting of a sheep, skinned and cut open, soon brought vultures to examine and tug at it, and though the experiment was repeated scores of times, it never failed, on each fresh exposure, to attract the hungry birds. A wheelbarrow-load of tempting carrion was next covered by a single sheet of thin canvas, above which bits of fresh meat were strewn. The fresh meat was soon eaten, but, though the vultures must have frequently had their bills within an eighth of an inch of the carrion beneath, they did not discover it.

"While at Valparaiso in 1834, Darwin experimented on twenty or thirty condors which were kept in a garden at that place. They were tied in a long row at the foot of the wall, each bird by a single rope, and Darwin walked backward and forward before them, at a distance of about ten feet, with a piece of fresh meat in his hand, wrapped securely in a piece of white paper. No notice whatever was taken of it by the birds. He then threw it on the ground within a yard of an old male condor, who looked at it carefully for a moment and paid no further attention. With a stick it was pushed closer and closer, until he touched it at last with his beak, when instantly the paper was torn off, while every bird in the long row began struggling and flapping its wings."

Criticisms.—I have made these quotations in full for the purpose of offering a few criticisms, and adding my own observations.

First point. Mr. Owen, as a comparative anatomist, declares that the olfactories are largely developed. Mr. Owen's testimony on this point I take as entirely satisfactory. Now I boldly challenge the world to produce an instance of a large, well-developed nerve of sense, in any species, which was not so developed by use, and which is not used. This, I think, is pretty good Darwinism.

For what, however, does the Turkey Buzzard need a large and well-developed organ of smell? Animals with any large sense-organ need that organ for one of two purposes—*either to guard against danger, or to aid in finding food.* Hunters, in their search for deer, know well that they must calculate on keeping their quarry at the windward. The deer's sense of smell is keen, and he flies from the tainted breeze at his highest speed.

The Buzzard does not need the sense of smell for protection against danger. *To aid in its search for food is, therefore, its only use in this bird.* I might rest my argument right here, and leave it for others to overthrow my position.

I premise here that I do not call in question the Buzzard's keenness of vision. That is granted; but any experiment that goes only to prove the Buzzard's keenness of vision, by no means proves its sense of smell dull.

Now, what are the conditions on which the sense of smell is available? First, there must be something to taint the medium, whether water or air. Anglers sometimes put some strong odor on their bait. The water dissolves this, and the fish, under certain conditions, smell it, and rush for it. Something which the air can dissolve is exposed in the air, which the air takes up and diffuses, and animals with a keen sense of smell for this thing speedily find their way to it. Kill any animal by bleeding, during the warm weather, and that animal will scarcely breathe its last before swarms of the green meat-fly will be humming around it.

But this is not all. The fish can never smell the tainted water up stream. It must be in the water below the tainted bait. Moreover, the tainted current takes a peculiar form, gradually spreading laterally and up and down, giving to the tainted tract approximately the shape of a cone.

In precisely the same manner, any odor spreads through the air. If the air is very calm, the odor rises in the shape of an inverted cone. If now a bird passes above it, and the odor is one springing from the customary food of such birds, it will descend in search of its scented food. If the wind has a gentle movement, the odor rises obliquely; and the bird, in hunting its food, will descend obliquely along the scented tract.

If the wind is high, the odor is born off horizontally; and the bird, when it crosses the tract of scented air, will follow it horizontally.

One word further. The Buzzard is not formed for digging the earth, or for tearing away any obstacles, in order to reach a tainted carcass.

Now, let us proceed with the experiments tried, and relied on as proofs that Buzzards do not use their sense of smell in search of food. First, Mr. Audubon's perfectly dry, stuffed deer skin. Admit that the Buzzards came, because they saw what appeared to be a deer. Does that prove that the Buzzard does not search by smell? It is a mere negative, utterly devoid of the slightest relevancy in the argument.

Second, the Buzzard caught a little snake. That only shows that the Buzzard can see.

Third, the big dead hog *thoroughly concealed*. The author says the Buzzards passed near it *by accident*. Is he sure that they flew near it by accident? I affirm that they passed near it in search of it, but it being thoroughly concealed they failed to find it; and had they thought it in the brush-heap they could not have reached it. Dogs found it, of course, and removed the brush.

Fourth, they did find a pig—a *little pig*—by tracking its blood.

Now these experiments determine nothing whatever concerning the sense of smell—the object of the experiments.

Bachman's painted sheep simply and only shows that the Buzzards can see, and can be imposed on. I remember that a certain ancient Greek painter so cunningly imitated grapes, that the poor little birds came and pecked at his pictures. Poor things, they were deceived; so were Bachman's Buzzards. But, really, does this prove anything concerning the sense of smell? Not in the least.

Secondly, he takes "a wheelbarrow-load of *tempting* carrion." completely covers it from view with canvas and scatters fresh meat above the canvas. The Buzzards come and eat the fresh meat, picking it piece by piece from the canvas covering; but did not tear off the covering and get at the carrion. Very well. Now he leaves us with the impression that he concludes that the Buzzards did not smell that carrion at all. Undoubtedly, however, the Buzzards thought themselves eating the very carrion itself; and, when they had eaten all they saw, they supposed that no more remained. This was only their usual experience. When they eat carrion from the ground, there always remains a great deal of stench in the ground, but they have no appetite for fetid ground, so they do not tear it up and fill their craws with it; no more did their stomachs have a craving for stinking canvas.

Mr. Darwin walked before the Condors with fresh meat securely wrapped in white paper, and the Condors took not the least notice of it; but so soon as the old male Condor got his nose down so he could take the air, he seized it, and tore off the paper in an instant. Now, Mr. Darwin forgot to tell us which way the wind blew, or whether or not there was any wind at all. His experiment proves absolutely nothing.

I have now some observations that are *positive*, relative to the keenness of the smelling power of the Turkey Buzzard.

In Christmas week, 1874, my folks in Virginia killed their hogs. As country women usually do, they saved the coarsest offal, put it in a pot, and set it away in the corner of the meat-house, intending to add the ley of wood-ashes, cut the grease, and make soap of it. The pot was forgotten. I was at the North at that time, and returned in February, knowing nothing of the pot.

In April, that pot revealed itself by serving a writ of ejection on any one that ventured into the meat-house. It was discovered, and itself was ejected from the meat-house to the woodshed one evening, of which proceedings I knew nothing.

I am an early riser. Next morning, as soon as light, I was up and about the chores of the plantation. I had occasion to pass through the wood-house; and I went out faster than I went in. The dogs had found that pot full of stench and had eaten all their stomachs could endure.

The wind was blowing a furious gale from the east. It was all a man could do to keep his feet. About sunrise I chanced

to look to the west, and saw a large number of Buzzards, more than two miles away, crossing a line back and forth, from north to south; and I soon discovered that they were coming eastward. It did not occur to me that they were tracing the tract of tainted air from that pot full of putrescence. I kept quietly about my business and the Buzzards kept about theirs; and in less than twenty minutes from the time I first discovered them, they were on hand, wheeling about that woodshed. They were fifty or sixty strong. They staid around during an hour or two, when they gave up the search and left for other parts. Here was, therefore, a cone of tainted air, with its apex in that pot. It was drifted rapidly to the west, rising at an exceedingly low angle. The Buzzards crossed that cone back and forth so accurately that I could mark its limits almost exactly. Now there is no possible hypothesis applicable to the solution of these Buzzards' actions, but that they smelt that stench more than two miles. I might give many other notes on this matter, but I deem this perfectly apropos and convincing.

I have great regard for Mr. Audubon, Mr. Bachman, and Mr. Darwin, for what they have well done; but, in a series of experiments for ascertaining a great scientific fact, that these men should so blunder, and so falsely reason, is to me certainly astonishing. In attacking their conclusion, in this case, I feel that they are merely human.

FOURTH MEETING OF THE AMERICAN ORNITHOLOGISTS' UNION.

THE fourth meeting of the American Ornithologists' Union was held at the National Museum in Washington, November 16, 17, and 18, 1886. The number of members in attendance was about the same as at previous meetings, namely, about twenty Active Members and thirteen Associates. The official report of the Secretary stated that but a single death had occurred among the members during the past year,—that of Mr. Snowdon Howland, of Newport, R I., an Associate Member, well known as an

oölogist of note.* There is at present no vacancy in the class of Foreign Members (limited to 25), and there are only four vacancies in the class of Active Members (limited to 50). The Corresponding Members (limited to 100) number 69, and the Associate Members (unlimited as to number), 112.

The Treasurer's report made known the fact of a considerable deficit, partly on account of 'The Auk,' and partly on account of the publication of the 'Code and Check-List.' While the assets of the Union, consisting of its unsold publications, much more than offset this deficiency, it was deemed desirable to take measures to at once relieve the treasury of debt. It was therefore voted to open a paper for voluntary subscriptions to meet the present indebtedness, the subscribers being allowed to receive, at their option, back volumes of 'The Auk,' or copies of the 'Code and Check-List,' to the amount of their subscriptions.† In reference to the future, it was stated that there seemed to be little danger of any deficit on account of 'The Auk,' or from any other source, and that the financial prospects of the Union gave no cause for uneasiness.

The report from the Council included the following nominations for membership, namely, to the class of Active Members, Messrs. William Dutcher and Jonathan Dwight, Jr., of New York City, and W. E. D. Scott, of Tarpon Springs, Florida (formerly of Arizona); to the class of Corresponding Members, Messrs. T. Büttikofer, Leyden, Holland; M. Mamèye, Tokio, Japan; Robert MacFarlane, Winnipeg, Manitoba; W. E. Brooks, Milton, Ontario. To the class of Associate Members there were 44 nominations. All the nominees were later duly elected.

The Council also recommended that the Union take measures to become an incorporated society, and that a committee be appointed to draw up a new Constitution, accompanied by appropriate By-Laws, for adoption under the Act of Incorporation. Later in the session the Union voted to become incorporated, and instructed the Council to take the necessary steps to secure its incorporation, and also to draft a new Constitution and By-Laws, for adoption at the next annual meeting.‡

* See Auk, III, p. 144.

† The prompt responses to this appeal, it may be stated, have satisfactorily met the emergency.

‡ The Council appointed as a committee on incorporation the President and Professor Baird, and as a committee to draft the new Constitution and By-Laws the President, Professor Baird, Dr. Coues, Mr. Henshaw, and Dr. Stejneger.

The reports of Committees proved of special interest, and showed commendable activity on the part of their members. The chairman of the Committee on the Protection of North American Birds, Mr. George B. Sennett, gave a detailed and carefully prepared report on the work of this committee, which has held, during the year, twenty meetings at which a quorum was present for the transaction of business, besides several informal sessions. The committee had endeavored to awaken public interest in behalf of the birds, by giving information as to the extent of their destruction for millinery and other needless purposes; believing that a proper public presentation of these facts would go far toward checking this great evil. It has also drafted what it deems a suitable law for the protection of song and non-game birds, the enactment of which in the various States it not only recommends, but which it is taking measures to secure. The proposed law has been practically adopted by the State of New York, and seems likely to meet with favor among legislators in other States. They have published two 'Bulletins,' one of sixteen quarto pages, the other of eight, large editions of which have been gratuitously circulated, and of which copies may be obtained on application to members of the committee. Notwithstanding the considerable outlay of money involved, the committee, by the aid of a few outside contributions, had met all the expenses incurred, and had no indebtedness to report to the Union. It has been greatly aided in its work by the 'Science' and 'Forest and Stream' Publishing Companies, these journals having been, respectively, the mediums of the original publication of the 'Bulletins,' which were later issued in pamphlet form in large editions.

The Audubon Society, an outgrowth of the Committee's work, proves a most efficient co-worker. Under the fostering care of the 'Forest and Stream,' this society already numbers some 16,000 members, with over 300 local secretaries, scattered throughout the United States and in various foreign countries. A special report of the work of the Audubon Society, from Dr. George B. Grinnell, to whose efforts the Society owes its existence and success, was included in the report of the committee. The committee also acknowledged the important aid it had received from the American Humane Association which, through its President, the Rev. G. E. Gordon, had given it very valuable

assistance. The public press had also warmly seconded its efforts, and it felt justified in claiming that its labors had yielded most encouraging results, and that the future was full of promise of further successes. The public was thoroughly aroused to the importance of enforcing strenuous measures for the better protection of our birds, and the sympathy and assistance received by the committee in its work was full of encouragement to further effort.*

The report of the committee was accepted as a report of progress, and the committee continued.

The chairman of the Committee on the Geographical Distribution and Migration of North American Birds, Dr. C. Hart Merriam, gave a very satisfactory account of the work of his committee, dealing particularly with the economical aspects of its work. As already stated in the pages of 'The Auk,'† the work undertaken by this committee has practically been assumed by the U. S. Department of Agriculture, and has now reached the status of a distinct Division of this Bureau of the Government, under the title 'Division of Economic Ornithology and Mammalogy,' the scope of the work under Government auspices having been broadened to include the economic relations of mammals to agriculture as well as those of birds. Last June, through the influence of Senator Warner Miller, of New York, not only was this important change secured, but also an appropriation of \$10,000 for carrying on the work for the present year. This appropriation was for the "promotion of Economic Ornithology and Mammalogy; an investigation of the food-habits, distribution, and migration of birds and mammals in relation to agriculture, horticulture, and forestry; for publishing reports thereon; and for drawings, and travelling and other expenses in the practical work of the division." Dr. Merriam has associated with him as scientific assistants Dr. A. K. Fisher and Prof. W. B. Barrows.

Dr. Merriam, in his report, referred especially to his investigations in relation to the Bobolink—the 'Rice Bird' of the South—

* For notices of the work of this committee, its organization and membership, see Auk III, pp. 143 and 287, and its 'Bulletins,' entitled as follows: American Ornithologists' Union. Bulletin No. I. of the Committee on Protection of Birds. Destruction of our Native Birds, pp. 1-16. Published originally in 'Science,' No. 160, Feb. 26, 1886.

Bulletin No. 2. Protection of Birds by Legislation, pp. 1-8. Published originally in 'Forest and Stream,' Nov. 11, 1886.

† See Auk, III, pp. 117, 416.

and the English Sparrow, and in less detail to the investigations of the food habits of our birds in general. He gave a very interesting and detailed account of his observations in the rice fields of South Carolina and Georgia, and Dr. Fisher related his observations in the rice fields of Louisiana.

The work of collecting data respecting bird migration is still continued, the number of observers to whom schedules have been sent during the last year being fully up to the average of past years.

As yet none of the reports prepared by the division superintendents have been published but several are nearly ready for the press, as is also a special report on the English Sparrow; the publication of some these reports has been unexpectedly and unavoidably delayed, but their early appearance may now be anticipated.

The reports of the two committees elicited interesting remarks bearing mainly on the subject of the economic relations of birds to man, and on their protection, the work of the two committees being more or less inter-related at many points.

The reading of scientific papers occupied the third day's session. Col. N. S. Goss, of Kansas, presented a paper entitled 'Additions to the Catalogue of the Birds of Kansas' (published in this number of 'The Auk,' pp. 7-11), and another on 'The Number of Eggs constituting a Normal Set.'

Mr. George B. Sennett gave a paper on 'The Snowy Plover of Texas,' with an exhibition of specimens.

A paper from Dr. Ira Sayles was read on the 'Sense of Smell in the Turkey Buzzard' (see this number of 'The Auk,' p. 5).

Mr. Frederick A. Lucas presented interesting notes of his experience in capturing sea birds (Procellariidæ) (see *antèa*, pp. 1-7).

Dr. L. Stejneger gave a short résumé of the methods of the celebrated German ornithologist, Chr. L. Brehm, illustrated by a good series of a South European Ring Thrush (*Turdus alpestris* Brehm), which prejudice and want of material have prevented the European ornithologists from recognizing as distinct from the northern typical *Turdus torquatus*. Dr. Stejneger in rediscovering this interesting and strongly marked species was able to substantiate the observations made by Brehm, and he predicted that if European ornithology be studied on a plan similar, and with similar means, to that applied here in America, still

more important disclosures would result. For such a study the Brehm collection, which since his death has been inaccessible, would be indispensable.

Other papers presented by title were 'The Summer Birds of the Bras d'Or Region of Cape Breton Island,' by Jonathan Dwight, Jr. (see *antèda*, pp. 13-16); 'The Summer Birds of the Presidential Range of the White Mountains, N. H.,' by Mr. Arthur P. Chadbourne; and 'Notes on the Night Migration of Birds at Cleveland, Ohio,' by Mr. Wm. F. Dœrtenbach.

A committee on Avian Anatomy was appointed, consisting of Drs. Coues and Shufeldt.

Resolutions of thanks were tendered Professor Baird for his kindness in securing the lecture room of the U. S. National Museum as a place of meeting for the Fourth Congress of the Union; to Mr. George T. Angell, President of the Massachusetts Society for the Prevention of Cruelty to Animals, for securing protection during the past year to the Gulls and Terns breeding on Muskeget Island, Mass., by placing an agent there, deputized as a game constable, to prevent the destruction of these birds; to the Rev. G. E. Gordon, President of the American Humane Association, for assistance and co-operation rendered the Committee on Protection of North American Birds; also to the 'Science' Publishing Company, and to the 'Forest and Stream' Publishing Company, for valuable assistance rendered the same committee, and especially to the latter Company for its invaluable services in behalf of the Audubon Society.

The election of officers resulted in the re-election of the officers of 1886. At the close of a highly satisfactory three days' session the Union adjourned to meet in Boston, October 10, 1887.

RECENT LITERATURE.

Pleske on the Birds of the Kola Peninsula.—The second part of Mr. Theodor Pleske's valuable work* has just come to hand, and treats of

* Uebersicht | der | Säugethiere und Vögel | der | Kola-Halbinsel. | 'Von Theodor Pleske, | Cand. d. Naturwissenschaften. | —Theil II. Vögel und Nachträge. | — (Der Akademie vorgelegt am 5. März 1885.) | —Aus den "Beiträgen zur Kenntniss des Russischen Reiches und der angren- | zenden Länder Asiens, zweite Folge," besonders abgedruckt. | —St. Petersburg, 1886. | Buchdruckerei der Kaiserlichen Akademie der Wissenschaften. | Wass. Ostr., 9 Lin., No. 12.—8 vo. iv + 515.

the birds of that very interesting region, which embraces the so-called 'Russian Lapland.' Very properly, however, the author has ignored the political borders and includes part of Norwegian East-Finmark west to the Tana-fjord and Tana-elv. Towards the north and east the region is bordered by the Arctic Ocean and the White Sea.

The work, in the first place, is intended to be a report on the author's own explorations in that region during the summer of 1880, but ornithologists will be thankful that he intended it to include the observations of his many predecessors, for he has succeeded in producing a very valuable faunistic monograph of one of the most interesting parts of the Palæarctic Region. It will be seen, from the map, that the province in question connects the Scandinavian Peninsula with the Eurasian Continent. Scandinavia during the Glacial Period was probably uninhabited by any birds except, perhaps, the most Arctic species, covered, as it was, with enormous glaciers, and separated from the rest of the Western Palæarctic Region by a wide sea covering the German and Russian lowlands and uniting the Arctic and the Atlantic Oceans to the east of the peninsula. When the ice receded and the land rose, an immigration of animal life commenced from two different directions—from the south over the Danish Islands, and from the east over Finland, the broad neck of land which now separates the Baltic and the White Sea. This is not only a hypothesis invented to explain the constitution of the present fauna, but it is an observed fact, for the immigration both ways continues to-day, and the regular additions to the Scandinavian fauna during this century can be distinctly and positively traced. Thus it happens that a Central European, a Siberian, and a truly Arctic avifauna meet just in the region which Mr. Pleske has chosen for his monograph. The complexity of the migrating routes which pass along or cross this same section is well shown on the map accompanying Palmén's 'Zugstrassen der Vögel,' giving additional interest to the region, and explaining the fact that the author treats of over 200 species of birds, notwithstanding that the chief part of the country included is situated to the north of the Arctic Circle.

Mr. Pleske has had one great disadvantage: he has not had the opportunity of verifying his predecessors' statements and identifications by examining their specimens. In fact, most of the older records and many of the recent ones are not at all based on specimens, and those which have been collected are scattered all over the world. In many cases, therefore, there is a lack of *absolute* identification, which is felt more especially in the case of species, the subspecies or nearest allies of which, are very difficult to discriminate. Thus we are ignorant of the true status of '*Picus minor*' and of '*Pica rustica*' from that region, whether they are the Central European forms, or the Siberian subspecies, or both, or intermediate ones between the two. On the other hand, it is evident that the author, when having access to specimens, knows how to discriminate. Thus we note with satisfaction that for the first time in a work of that scope the Redpolls (*Acanthis*) are correctly understood, for Mr. Pleske clearly distinguishes, discusses, and describes three forms as occurring in the region, viz: *A. linaria*, *A. holballi*, and *A. exilipes*.

The faunal synopsis is preceded by an introduction which treats of the distribution of the species in the region in general, and in the different botanical zones of the country. Then follows a bibliography of the ornithological literature relating to Lapland, apparently very full, sufficiently detailed, and embracing 113 separate titles. This large material is admirably handled when treating each individual species, which is preceded by a complete synonymy of all the published records of its occurrence within the region. It is only to be regretted that he should have paid any attention at all (cf. p. 210 in regard to *Falco candicans*) to Rev. Bowden's miserable 'The Naturalist in Norway,' for a worse fraud and humbug, as far as the ornithology at least is concerned, has never been published.

In the synopsis the author follows Dresser's arrangement and nomenclature; a course to be specially commended.

Altogether Mr. Pleske's book makes a most welcome addition to ornithological literature, and we most heartily congratulate him upon its completion.—L. S.

W. E. Brooks on the Genus *Acanthis*.—Mr. Brooks, the well-known Indian Ornithologist, now living in Milton, Ontario, has recently contributed to 'The Ibis' two papers* on the Redpolls, especially the American species. The final result to which Mr. Brooks has arrived, he gives as follows: "We have, then, five very well-marked species of *Acanthis*, viz. *A. hornemanni*, *A. exilipes*, *A. rostrata*, *A. linaria*, and *A. rufescens*; also one doubtful bird, *A. linaria holbælli*." Of this latter he says: "To me it is not a thoroughly satisfactory species, like the others, but at present its long bill is not easily accounted for. I am not partial to the trinomial system, but for convenience' sake this bird might stand as *Acanthis linaria holbælli*. It is a variation not yet thoroughly worked out." The present reviewer, who, on an earlier page of this number of 'The Auk,' has attempted to put this form on a satisfactory footing, feels quite satisfied with this admission of Mr. Brooks, who, it must be remembered, is an opponent of the theory of evolution, and to whom a form must be a 'full' species or nothing. On the other hand it is very gratifying to find one's views in regard to so difficult a group as the Redpolls shared and sustained by an ornithologist of so great power of discrimination as Mr. Brooks, whose statements the present writer is glad to indorse in most cases. The differences of opinion between Mr. Brooks and myself relate directly to the question of 'species or subspecies,' or perhaps 'binomials or trinomials,' differences which, in fact, are quite unessential.—L. S.

Stejneger on Japanese Woodpeckers.—The first of a series of papers on Japanese birds, published in the 'Proceedings' of the United States

* Stray Ornithological Notes. *Ibis*, 1885, pp. 380-389; the portion relating to *Acanthis* on pp. 381-385. Additional Notes on the Genus *Acanthis*. *Ibis*, 1886, pp. 359-364.

National Museum, treats of the Woodpeckers,* of which ten species are recognized, and also one subspecies, the latter and two of the species being described as new. Questions of synonymy are treated in detail, and the references to previous writers on the species appear to be given with fullness. The paper is accompanied by a colored plate.

As Dr. Stejneger points out in his introductory remarks, the ornithology of Japan offers an inviting field, in which very little discriminating work has yet been done. "Formerly," says Dr. Stejneger, "it was sufficient to know that a bird was from 'Japan.' If the description of a Japanese species was found to fit a Japanese specimen approximately, the latter was identified as that species without further comparison. If the original specimen was described from Nagasaki, and the second one, believed to be the same, came from North Yesso, the habitat of the species was given as embracing the whole of Japan." Our knowledge of Japanese ornithology is at present only fragmentary, large portions of this great country being as yet almost unexplored, while some of it "is a complete *terra incognita*, ornithologically speaking." "American ornithologists," Dr. Stejneger well observes, "will not wonder at hearing that species apt to break up into local forms have done so in a group of islands which in extent corresponds to the coast from the Gulf of California to Vancouver Island, or from the southern extremity of Florida to Nova Scotia, with a variation of climate fully as great as that of the two last mentioned localities: with high mountain ranges, and studded with volcanoes eight thousand to twelve thousand feet high; with a vegetation . . . characterized in the south by the bamboo, the rice, the mulberry tree, and the tea-plant, while in the north the firs form extensive forests, and with a temperature ranging from the almost Siberian winters of Yesso, to the tropical heats of Kiu-Shin,' it would indeed be an extraordinary phenomenon, and quite reverse to what takes place in other countries of similarly varying conditions, were the birds of Japan uniform all through that empire."

The present paper is announced as the first of a series of "preliminary reviews of some of the most perplexing groups in order to solicit specimens and advice from fellow ornithologists, and to induce those who have the opportunity to attempt the solution of some of the questions, if possible, in the field." As already stated (*Auk*, III, p. 495), the author has the "intention to write a comprehensive and reliable guide to Japanese ornithology, with ample descriptions of all the known forms, from original Japanese specimens," and he appeals for aid in the way of material for carrying out his purpose.—J. A. A.

Stejneger on the British Marsh-Tit.—Dr. Stejneger has separated† the British Marsh-Tit, under the name *Parus palustris dresseri*, from the European form, from which it differs in being darker in color, with a shorter

* Review of Japanese Birds. By Leonhard Stejneger. I. The Woodpeckers. Proc. U. S. Nat. Mus., Vol. VIII, pp. 99-124, pl. ii. Published Sept., 1886.

† The British Marsh-Tit. By Leonhard Stejneger. Proc. U. S. Nat. Mus., 1866, pp. 200, 201.

tail, etc. Although British ornithologists have long been aware of these differences, Dr. Stejneger thinks it curious that they have not had "the courage to describe this [British] bird under a distinctive name, not even those who recognize *Parus britannicus* as a distinct species."—J. A. A.

Stejneger on a 'Lost Species' of Murrelet.—According to Dr. Stejneger,* Pallas's *Cepphus perdix* must be removed from the list of synonyms and rank as a good species, which "takes the place of *B. marmoratus* in Asiatic waters," the latter being apparently confined to the American side. A Kamtschatkan specimen (*♂* ad., Aug. 27, 1884) of *B. perdix* is described in detail and figured, and the synonymy and distinguishing characters of this species, *B. brevirostris*, and *B. marmoratus* are presented at length.—J. A. A.

Ferrari-Perez on the Birds of Mexico.—In 1877 the Geographical and Exploring Commission of the Republic of Mexico was established by an act of Congress, and became finally organized in 1878. In 1879 Mr. Fernando Ferrari-Perez was appointed to the scientific corps of the general staff as Naturalist of the Commission. During the years that have since elapsed considerable collections have been brought together in different departments of natural history. 'Catalogues' of which are to appear in the 'Proceedings' of the U. S. National Museum. The first instalment of these has now appeared†; it includes Mammals, Birds, Reptiles, and Batrachians, the report on the birds occupying 52 pages, and embracing 265 species. The annotations generally include merely citations of the works where the species were first described, or in which the nomenclature adopted was established, the vernacular names, and list of the specimens, with date and locality of capture. The specimens have been determined by aid of the collections at the U. S. National Museum, and assistance by Mr. Ridgway and Dr. Stejneger in their identification is also acknowledged. Besides this, there are remarks by Mr. Ridgway on many of the more interesting species, duly bracketed and signed "R. R.," these annotations, of course, adding greatly to the value of the 'Catalogue.' The new species, which were briefly diagnosed by Mr. Ridgway in a recent number of the 'Auk' (III, p. 331), are here described at length.

The paper forms not only an important contribution to our knowledge of Mexican ornithology, but also throws much light upon the southward range of many North American species. Sprague's Lark (*Anthus spraguei*) is reported from Puebla, a point 1000 miles further south than any previous record.—J. A. A.

* On *Brachyramphus perdix* (Pall.) and its nearest Allies. By Leonhard Stejneger. Zeitschr. f. ges. Orn., 1866, pp. 210-219, pl. vii.

† Catalogue of Animals collected by the Geographical and Exploring Commission of the Republic of Mexico. By Fernando Ferrari-Perez, Chief of the Natural History Section. Proc. U. S. Nat. Mus., 1886, pp. 125-199. Published Sept. 1886. (Birds, pp. 130-182.)

Ridgway on a Melanistic Phase of the Broad-winged Hawk.—Mr. Ridgway has recently described* “the melanistic plumage of *Buteo latissimus*,” as exhibited in a specimen taken at Baxter, Iowa, by Mr. J. W. Preston. This is the only specimen thus far seen by Mr. Ridgway, but Mr. Preston reports having seen two others, one of which was nearly secured.—J. A. A.

Ridgway on the Species of the Genus *Empidonax*.—In the last number of ‘The Ibis’ (Oct., 1886), Mr. Ridgway has three papers on the *Empidonaces*. The first† describes a new species (*Empidonax salvini*) from Guatemala; the second‡ treats of the distinctness of *E. brunneus* Ridgw. from *Empidochanes furcatus* (Max.), the two species being found to be not only specifically but generically different, although some authorities have considered them identical. The third§ gives an elaborate synopsis of the species of the genus *Empidonax*, of which 15 species and 3 subspecies are recognized; and also diagnoses of the genera *Mitrephanes* and *Empidochanes*.—J. A. A.

Cory on Birds from several little-known Islands of the West Indies.—Mr. Cory having recently received collections of birds from several of the lesser known West Indian islands has given|| in the last number of ‘The Ibis,’ nominal lists of the material obtained, as follows: Barbadoes, 12 species; St. Vincent, 23 species; Marie Galante, 13 species; La Desirade, 11 species; Grand Terre, 15 species; also 10 species from Santa Lucia—J. A. A.

Minor Ornithological Publications.—The ‘Forest and Stream,’ Vols. XXIV and XXV, 1885, contains the following notes and papers (Nos. 1069–1126):—

1069. *The Birds of Michigan*. By Dr. Morris Gibbs. *Forest and Stream*, Vol. XXIV, Jan. 29, 1885, pp. 5, 6; Feb. 5, pp. 26, 27; Feb. 12, pp. 44, 45; Feb. 19, p. 65; Feb. 26, p. 84; Mch. 5, p. 104; Mch. 12, pp. 124, 125; Mch. 19, p. 144; Apr. 2, p. 184; Apr. 16, p. 224; Apr. 30, pp. 267, 268; May 7, pp. 288, 289; May 14, p. 307; May 28, p. 347; June 11, p. 387; June 25, p. 427; Vol. XV, July 30, pp. 4, 5; Nov. 12, p. 304; Dec. 3, p. 365.—An elaborately annotated list, containing copious notes on the habits of many of the species mentioned.

1070. *Golden-winged Woodpecker Wintering in Maine*. By Everett Smith. *Ibid.*, Feb. 5, p. 27.

* Description of a Melanistic Specimen of *Buteo latissimus* (Wils.). By Robert Ridgway. *Proc. U. S. Nat. Mus.*, 1886, pp. 248, 249. Published Oct. 1886.

† Description of a new Species of the Genus *Empidonax* from Guatemala. *Ibis*, 1886, pp. 459, 460.

‡ On *Empidochanes furcatus* (Max.) and *Empidonax brunneus* Ridgw. *Ibid.*, pp. 360, 461.

§ On the Species of the Genus *Empidonax*. *Ibid.*, pp. 461–468.

|| On a Collection of Birds from several little-known Islands of the West Indies. By Charles B. Cory. *Ibid.*, 1886, pp. 471–475.

1071. "*The Birds of Long Island.*" By J. B. B. *Ibid.*, Feb. 12, p. 46.—Notice of J. P. Giraud's well-known work, with extracts from it.
1072. *How to Identify Birds.* By Everett Smith. *Ibid.*, Feb. 12, p. 44.—The writer repeats his offer to identify specimens, and gives directions how to send them in the flesh.
1073. *The Song of the White-throated Sparrow.* By Dr. M. L. Leach. *Ibid.*, Feb. 19, p. 65.
1074. *Virginia Rail Wintering on Long Island.* By Paul Geipel, Jr. *Ibid.*, Mch. 5, p. 105.
1075. *Winter Range of the Robin.* By W. W. Cooke. *Ibid.*, Mch. 11, p. 125.
1076. *Southern New York Winter Birds.* By W. T. E. *Ibid.*, Mch. 12, pp. 125, 126.—Notes on 23 species.
1077. *Snow Buntings* [at Perth Amboy, N. J.]. By J. L. K. *Ibid.*, Mch. 12, p. 126.—The first seen in several years.
1078. *Acadian Owl.* By O. W. R. *Ibid.*, Mch. 19, p. 145.
1079. *A Screech Owl Attacks a Plymouth Rock Rooster.* By S. L. Davison. *Ibid.*, Mch. 19, p. 145.
1080. *Migratory Quail.* By W. Hapgood. *Ibid.*, Mch. 26, p. 166.—The recent attempt to stock the country with these birds declared to be a failure.
1081. *White Egrets in Orleans County, N. Y.* By S. L. Davison. *Ibid.*, April 9, p. 204.—Three killed in Carlton, "on Thanksgiving Day, 1883."
1082. *Where Did It Come From?* By Robert Ridgway. *Ibid.*, Apr. 9, p. 204.—Records the killing of a Prairie Chicken (*Cupidonia cupido*) on the Virginia side of the Potomac near Washington, March 17, 1885. (See below, No. 1086.)
1083. *Misplaced Confidence.* By F. Park, Jr. *Ibid.*, Apr. 16, p. 225.—A Great Horned Owl eats a Screech Owl confined with it in the same cage.
1084. *The Winter and Spring Birds at St. Louis, Mo.* By W. W. Cooke, based on notes by Otto Widmann. *Ibid.*, Apr. 23, p. 248.
1085. *Maine Birds.* By Everett Smith. *Ibid.*, p. 248.—Note on *Turdus mustelinus*.
1086. *The Washington Prairie Chickee.* By Homo. *Ibid.*, Apr. 23, p. 248.—May have been the descendant of birds liberated at Snow Hill, Md., some years before. (See above, No. 1082.)
1087. *The Woodcock's Song.* By J. H. D. *Ibid.*, Apr. 30, p. 268.
1088. *Birds in Queer Places.* By X. Y. Z. *Ibid.*, May 7, p. 288.—Relates mainly to various species of Grallæ and Rails.
1089. *Fox Sparrows in Spring Migration.* By J. L. Davison. *Ibid.*, May 7, p. 289.
1090. *White Pelican on Long Island.* Editorial. *Ibid.*, May 21, p. 328.—One killed at Roslyn, L. I., May 11, 1885.
1091. *The Lesson of a Market.* By Geo. B. Sennett. *Ibid.*, June 4, pp. 366, 367.—On the small birds, killed as game, in the market of Norfolk, Va.

1092. *Arizona Bird Notes*. By Herbert Brown. *Ibid.*, June 4, p. 367.—Notes on the nesting of Palmer's and Bendire's Thrashers, and several species of Owls.

1093. *The Ivory-billed Woodpecker in Florida*. By S. C. Clarke. *Ibid.*, June 4, p. 367.

1094. *The Big [Ivory-billed] Woodpeckers*. By Geo. A. Boardman and J. M. H. *Ibid.*, June 11, p. 388.

1095. *The Big [Ivory-billed] Woodpecker [in Arkansas]*. By Yell. *Ibid.*, June 18, p. 407.

1096. *The Great [Ivory-billed] Woodpeckers [in Florida]*. By W. A. D. *Ibid.*, June 25, p. 427.

1097. *A "Brood" of [Golden-winged] Woodpeckers*. Editorial. *Ibid.*, June 25, p. 427.—"Nineteen young ones, alive and in good condition," in one nest.

1098. *The Nest and Eggs of Swainson's Warbler*. (*Helinaia swainsoni*.) By William Brewster. *Ibid.*, July 9, p. 468.—Detailed account of the breeding of this rare species, with descriptions of nests and eggs, based on notes and specimens received from Mr. Arthur T. Wayne.

1099. *Rare Florida Birds*. By Red-Wing. *Ibid.*, July 16, p. 487.—Relates to Ivory-billed Woodpeckers and Parakeets.

1100. *Night Hawks Nesting [on Roofs of Buildings]*. By Dr. E. Sterling. *Ibid.*, Vol. XXV, July 30, 1882, p. 4.

1101. *The English Sparrow. Verdict of the American Ornithologist's Union*. *Ibid.*, July 6, pp. 24, 25.—Report of the Committee on the English Sparrow.

1102. *Quail in Confinement*. By W. and Jno. H. Osborne. *Ibid.*, Aug. 6, p. 25.

1103. *Water Birds of Nova Scotia*. By J. Matthew Jones. *Ibid.*, Aug. 13, pp. 43, 44; Aug. 27, p. 83; Sept. 10, p. 123.—An annotated list of 105 species. Includes several obvious malidentifications. The account given of "Wilson's Petrel" doubtless relates to Leach's Petrel, to which latter there is no reference. The list includes the "Crested Grebe (*P. cristatus*)"!

1104. *The Pileated Woodpecker*. By Dr. E. Sterling. *Ibid.*, Aug. 13, p. 44.

1105. *Ornithological Inquiries*. By Dr. C. Hart Merriam. *Ibid.*, Aug. 20, p. 63.—Circular issued by the Department of Economic Ornithology, Dr. Merriam, Ornithological Agent.

1106. *Weapons in Game*. By Dr. E. Sterling. *Ibid.*, Aug. 29, p. 84.—A Wild Swan, with an Eskimo arrow through the right wing, killed near Cleveland, O., on its northward migration. Figure of the bird, and of the wing-bones and the arrow. (See further note on the same, in issue of Dec. 10, p. 384.) Under this title are also two notes on encysted bullets found in Ducks and Geese, respectively by D. H. MacGowan and C. T. Richardson.

1107. *Foreign Game Birds in America*. By X. *Ibid.*, Sept. 3, pp. 103, 104.—An important historical paper on the subject.

1108. *The Colored Patch in the Crown of the Kingbird.* By C. Hart Merriam, M. D. *Ibid.*, Sept 14, p. 144.
1109. *How Many Nests?* By A. H. G. (of Scarborough, N. Y.). *Ibid.*, Sept. 24, pp. 163, 164.—On the number of broods per year, etc., of some of our common birds. (See also below, No. 1112.)
1110. *The Colored Patch in the Crown of the Kingbird.* By J. L. Davison. *Ibid.*, Sept. 24, p. 164.
1111. *Wild Fowl in Domestication.* By Junius P. Leach. *Ibid.*, Oct. 1, pp. 183, 184.
1112. *How Many Nests?* By A. H. G. *Ibid.*, Oct. 1, p. 184.
1113. *The Colored Crown of the Kingbird.* By J. G. R[ich]. *Ibid.*, Oct. 1, p. 184.
1114. *The Crown of the Kingbird.* By C. W. Beckham. *Ibid.*, Oct. 8, p. 204.
1115. *Kingbirds and Bees.* By G. L. Barnes. *Ibid.*, Oct. 8, p. 205.
1116. *Purple Grackle Near Philadelphia.* By Ellwood C. Erdis. *Ibid.*, Oct. 8, p. 205.
1117. *Destructive Electric Light Towers.* By G. Noble. *Ibid.*, Nov. 12, p. 305.—During a rainy night in October, 105 birds were picked up under one light tower in Savannah, Ga.
1118. *Annual Meeting of the A. O. U.* Editorial. *Ibid.*, Nov. 26, p. 342.—Short account of the third annual meeting, held in New York City, Nov. 17 and 18, 1885.
1119. *Anser Hutchinsi.* By Dr. E. Sterling. *Ibid.*, Dec. 10, p. 384.—Specimens found in the market of Cleveland, O.
1120. *Eider Duck in Michigan.* By R. B. Lawrence. *Ibid.*, Dec. 10, p. 384.—A female shot at Munroe, on Lake Erie, Nov. 12, 1885.
1121. *The A. O. U. Check List.* Editorial. *Ibid.*, Dec. 24, p. 429.—Notice of the work.
1122. *Protection of North American Birds.* Editorial. *Ibid.*, Dec. 24, p. 429.—Notice of the organization of the A. O. U. Committee on this subject, in New York City, on Dec. 12, 1885.
1123. *Arizona Quail Notes.* By Herbert Brown. *Ibid.*, Dec. 31, p. 445.—Relates chiefly to *Colinus ridgwayi*, and is an important contribution to the history of this species.
1124. *The Bailey Collection of Eggs.* Editorial. *Ibid.*, Dec. 31, p. 446.—Its sale and transference to the American Museum of Natural History in New York City.
1125. *A Swan in Massachusetts.* By T. *Ibid.*, Jan. 7, 1886, p. 466.—Record of a specimen shot at Middleboro, about Dec. 27, 1885. The name of the species is not given.
1126. *Arizona Quail.* By Robert Ridgway. *Ibid.*, Jan. 14, p. 484.—An important paper, in reply to that of Mr. Brown. (See above, No. 1123.)

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Dubois, Alph. Liste des Oiseaux recueillis par M. le Capitaine Ém. Storms dans la région du Lac Tanganyka (1882-84). (Bull. du Mus. roy. d'Hist. Nat. de Belgique, IV, 1866, pp. 147-150.)

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Hartlaub, G. Description de trois nouvelles espèces d'Oiseaux rapportées des environs du Lac Tanganyka (Afrique Centrale) par M. le Capitaine Ém. Storms. (Bull. du Mus. roy. d'Hist. Nat. de Belgique, IV, 1886, pp. 143-146. pl. iii, iv.)

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Richenow, Ant. Bericht über die Leistungen in der Naturgeschichte der Vögel während des Jahres 1884. (Arch. f. Naturg., LI, ii, Heft 2.)

Shufeldt, R. W. (1) On Injuries of the Beaks in Birds, and the method of repair. (Journ. Comp. Med. & Surg., Oct. 1886.) (2) Osteological Notes upon the Young of *Geococcyx californianus*. (Journ. Anat. & Phys., XXI, 1886, pp. 101, 102.) (3) On An Old Portrait of Audubon, Painted by Himself, etc. (Auk, III, Oct., 1886.)

Stejneger, L. (1) On *Brachyramphus perdix* (Pall.) and its nearest allies. (Zeitsch. f. ges. Orn. 1886, pp. 210-219, pl. vii.) (2) Review of Japanese Birds. I. The Woodpeckers. (Proc. U. S. Nat. Mus., 1886, pp. 99-124, pl. ii.)

Stolzmann, Jean. Quelques remarques sur le Dimorphisme Sexuel. (Proc. Zool. Soc. Lond., 1885, pp. 421-432.)

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Tschusi zu Schmidhoffen, V. Ritter v., und K. v. Dalla-Torre. Zweiter Jahresbericht (1883) des Comité's für ornithologische Beobachtungsstationen in Oesterreich-Ungarn. (Ornis, 1885.)

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GENERAL NOTES.

Occurrence of Cory's Shearwater (*Puffinus borealis*) and Several Species of Jaegers in Large Numbers in the Vicinity of Gayhead, Mass., during the Autumn of 1886.—In the early part of the summer of 1886, both mackerel and bluefish were very scarce near the coast of the Middle States, and it was ascertained that they were busily engaged in feeding on a small white fish, three or four inches long, occurring in immense numbers, 150 to 200 miles off the coast. This fish proves to be young sea herring (*Clupea vulgaris*). Towards the end of September this herring came inshore in large numbers, from Point Judith to Buzzard's Bay and Vineyard Sound, where they remained until the end of October, and perhaps still later. They were accompanied by mackerel of unusually large size and fatness, which furnished for many weeks an ample supply to fishing crafts of various kinds, and they were captured, for the most part, with the hook and line.

With the herring came also enormous numbers of *Puffinus* and *Stercorarius*, the former proving to be almost exclusively the *Puffinus borealis* Cory, with a few *Puffinus stricklandi*. None of the *P. major* were seen.

The *Stercorarius* consisted principally of *S. parasiticus* and *S. pomarinus*; these in every imaginable stage of coloration; some being entirely dusky and others in various grades of immaturity; very few, if any specimens in full plumage being seen.

The Shearwaters occurred in flocks of perhaps from fifty to two or three hundred, the bunches being generally found quietly resting on the water and feeding, while swimming, upon the herrings that were so abundant in the vicinity. They were very tame, but approach to them could be best made by a steam launch, which would almost run over them before they would start to fly. A dozen birds were killed by the discharge of two guns from a launch. About a hundred specimens were secured, and thousands could easily have been killed if necessary.

When last heard from, towards the beginning of November, the birds were still with the herrings, and were found very abundantly off Gay Head, Menemsha Bight, Cuttyhunk, and elsewhere, both in Vineyard Sound and Buzzard's Bay.

The Jaegers were shy, and were generally killed singly as they flew past. They did not seem to associate closely with the Shearwaters.—S. F. BAIRD. *Washington, D. C.*

Phœnicopterus ruber as a South Carolina Bird.—In 'The Auk' for July, 1886. Mr. Loomis gave a short account of the capture of this species near Georgetown. As I am able to give a full account of its capture, I trust that the following will prove acceptable. Learning from my friend Dr. G. E. Manigault, that W. St. Julien Mazyck, Esq., captured the bird, I wrote to him for a full account of its capture. Mr. Mazyck very kindly wrote me, under date of November 22, as follows:—"The fall of the year 1876 was stormy, with much rain. Somewhere between the 10th and 16th of September there was a gale of wind. A day or so after the gale, Mr. B. H. Ward observed a large, strange bird on De Bardien Island, which he determined to watch and make an effort to capture. Inadvertently mentioning what he had seen, one of his neighbors the next day killed the bird, and brought it to Pawley Island, when I identified it as the Flamingo.

"That night, several hours after it was killed, I skinned such parts as I judged would be acceptable to Dr. Manigault. The legs and other long bones were badly shattered by the turkey shot, and with no experience I made a poor job of the bird. The heat and moisture of the weather softened it so much, Dr. Manigault wrote, that he could do nothing with it. He, however, identified it as a young male.

"The bird was evidently lost in the storm and driven to this shore, where he remained four or five days before being killed."—ARTHUR T. WAYNE. *Charleston, S. C.*

Occurrence of the Florida Gallinule at Springfield, Mass.—A Florida Gallinule (*Gallinula galeata*) was taken October 1, 1884, at a point on the Connecticut River about five miles below Springfield. The bird was first noticed in the water close to the bank, in the act of diving. I immediately went to the spot with a dog, who dashed in where the bird disappeared, when it immediately came to the surface and instantly took to wing and was shot. A companion then informed me that it was similar to a bird that he had recently taken. Early in September, 1886, I was told that a strange bird, "like a very large Rail," had been seen in the reeds in a set-back, near the mouth of the Agawam River, which enters into the Connecticut directly opposite this city. On the 14th of September, upon going to this place, I at once succeeded in getting this bird up, but in shooting missed it. It alighted about a hundred yards up the set-back, where, after some search, it arose from some tall grass within a few feet of where I stood and was killed.

Four days later (September 18th), at very nearly the same place where

the first mentioned Gallinule was shot in 1884, the dogs drove out from the reeds another, which was shot; and on the same day, a little farther down the river, and about a mile north of the Connecticut State line, I saw what at first seemed to be a Grebe swimming rapidly out into the river; upon pursuing it with a boat it arose, flying slowly and near the water, and was also killed. This made the fourth time I had been present at the capture of a Florida Gallinule in this vicinity within two years. I also think I have seen birds of this kind on other occasions when they have not been taken, and have very little doubt but that my companion was correct in his statement in 1884, that he had shot one, although there is a possibility he had mistaken a Coot for a Gallinule. They very closely resemble each other in every respect, except the feet. At all other places where these birds were first found, the bottom was very soft and there was a rank growth of wild rice, upon the seeds of which plant the birds were feeding.—ROBERT O. MORRIS, *Springfield, Mass.*

Wilson's Phalarope (*Steganopus tricolor*) in Rhode Island.—On September 13, 1886, one of these Phalaropes, in immature plumage, was brought to me by J. Glynn, Jr., who had noticed it among some birds shot by one of the local sportsmen, and seeing that it belonged to an uncommon species had obtained it from him. I understand that when shot it was in company with two 'Creakers' (*Tringa maculata*). This is the second record of the bird's occurrence in this State.—WILLIAM C. RIVES, JR., M. D., *Newport, R. I.*

Occurrence of *Phalaropus lobatus* at Syracuse, N. Y.—September 3, 1886, an adult male Northern Phalarope was shown to me by Mr. Charles Noxon of this city, who procured it September 2 on Onondaga Lake, on the outskirts of Syracuse.

The bird, in company with another (female), which was also secured, was discovered swimming gracefully about in the middle of the lake, and both were so tame as to be shot without trouble. Two days after (September 4) another specimen, a male, was shot in the same locality by Mr. E. M. Hasbrouk; on September 25, following, another was seen, but not procured. Previous to this the Northern Phalarope has been recorded but once in this County.—MORRIS M. GREEN, *Syracuse, N. Y.*

A Fern-eating Woodcock.—One of the most singular departures of birds from their ordinary food-habits that I have ever observed is the following: In examining the digestive organs of more than one hundred Woodcocks, I think I have never found in them anything but the common earth-worm, either entire or in various stages of digestion, excepting in one or two instances, a leech (*Hirudo medicinalis*).

The Woodcock in question was brought to me to be mounted by Mr. W. C. Alvord, of Washington, D. C., who shot it while Woodcock shooting at Martha's Vineyard. This bird was one of several killed on the 17th of October, 1885. When skinning it my attention was called to its very

singularly distended crop. Upon making a cut into the membrane with a pair of scissors, out rolled, or rather jumped, the contents, which being released from confinement increased to three times its former size. At the same moment I was astonished to observe the character of the contents, which proved to be leaves of the common fern (*Pteris aquilina*), rolled up in so curious a manner, and in such quantity, as to plainly indicate that it was the result of a deliberate meal, and not an accident.

The crop was so full as to be incapable of holding any additional material. No other substance was mixed with the leaves, the entire wad or ball being free from dirt of any character. Every leaflet of the fronds was intact, and after being soaked in warm water and spread out side by side they covered a space twelve inches square. The stomach and intestines appeared to contain parts of partly digested leaves, but nothing else, though this was not carefully determined.

A '*Fern-eating Woodcock*' is a novelty in my experience. Drs. Merriam and Fisher have desired me to send this record for publication to 'The Auk.' This is one of the most singular instances noted, not excepting even the record of the presence of an entire Song Sparrow in the crop of a Chuck-wills-widow.

It may be mentioned that the locality where this Woodcock was shot was an open marsh, with bushes here and there, while springs and small streams afforded in abundance the usual food of this very fastidious bird. The specimen was in fine condition—a plump and fat old female.—
FREDERIC S. WEBSTER, *Washington, D. C.*

A Further Note on *Colinus ridgwayi*.—I have recently received a letter from Mr. Herbert Brown, calling my attention to an error in my recent paper on this species (*Bull. Am. Mus. Nat. Hist.*, 1. No. 7, 1886, pp. 273 and 275, footnotes), in which the pair of Quails referred to as seen by Mr. Stephens are said to be the fragments sent to Mr. Ridgway and now in the National Museum. It proves they were not these specimens, but a "fairly good pair," which was later sent by Mr. Brown to Mr. Henshaw, and through the latter's kindness now before me. This adds two to the list of specimens known to be extant, raising the number to 21. The male presents the average characters shown by the series previously examined; the female is darker than the average for that sex, being in fact much the darkest of the series thus far seen, the bars, both the black and the white ones, being much stronger both above and below, and the tones of color much brighter and stronger throughout. It is thus an almost exact counterpart of the more strongly colored females of *Colinus graysoni*.

This proves to be the pair of birds referred to by Mr. Brown in one of his 'Forest and Stream' articles (Vol. XXV, No. 25, Jan. 14, 1886, p. 445), as having been seen by Mr. F. Stephens, W. E. D. Scott, E. W. Nelson, and H. W. Henshaw. Mr. Henshaw informs me that he had entirely forgotten having these birds in his possession until I spoke to him of them after receiving Mr. Brown's letter, as mentioned above. Had he recalled the fact of his having them at the time he heard I was at work on a paper on

this species, he says he should have certainly sent them to me then for examination.

Mr. Brown has also sent to me, since the publication of my paper, the head and neck of an adult male, killed July 19, 1886, in the Barboquivari Mountains. The specimen, when received by Mr. Brown, was too far gone to make a good skin, but being remarkable for its whiteness he saved the head, which is now before me. A broad white superciliary stripe runs from the nostrils on each side of the head to the nape, meeting on the forehead. There is a conspicuous white maxillary patch, and the anterior part of the throat is white, with more or less white mixed with the black over the remainder of the throat. The superciliary stripes are as broad and as well defined as in *C. graysoni*, and on the throat there is nearly as much white as black. The specimen, therefore, very nearly agrees with the form known as *C. graysoni*—much more nearly than any other previously examined, or than with typical *C. ridgwayi*—and goes far toward bridging the slight gap between these two forms. This is particularly interesting, from the fact that this specimen is not only from Arizona, but from the same locality as the others obtained by Mr. Brown.

Mr. Brown writes to me that he will soon renew his investigation of the habits of this species, in the hope of securing its nest and eggs. One of his collectors found a nest last year, containing eight eggs, but his collector delayed taking them, in the expectation that more would be laid; but on visiting the nest again he found that the eggs had hatched, and the prize was thus lost.—J. A. ALLEN, *Am. Mus. Nat. Hist., New York City.*

The Golden Eagle in Eastern Massachusetts.—Two Massachusetts specimens of the Golden Eagle (*Aquila chrysaetos*) have recently come into my possession. The first, a female, was killed in Paxton (Worcester Co.), Oct. 22, 1883; the second, a male, in Lynnfield, Nov. 23, 1886.—WILLIAM BREWSTER, *Cambridge, Mass.*

The Black Gyrfalcon (*Falco rusticolus obsoletus*) in Eastern Maine.—Mr. F. B. Webster has just sold me a typical example (♀) of this fine Falcon which came to him in the flesh from a gunner at Rockland, Maine. It was received Nov. 26, 1866, and judging from appearances, had been killed about a week or ten days previous to this date.—WILLIAM BREWSTER, *Cambridge, Mass.*

A Singularly Marked Specimen of *Sphyrapicus thyroideus*.—A very singularly marked adult male of this species was sometime since kindly sent to me for examination by Mr. C. A. Allen, of Nicasio, California. It was shot in Blue Cañon, California, Oct. 9, 1878, and another like it was said to have been seen in the same locality. This specimen differs from the ordinary adult male of this species in having a large patch of crimson-scarlet on the crown, about half an inch broad, and commencing about .15 of an inch from the base of the culmen; anteriorly, this red patch has a quite regular transverse outline, but posteriorly the red feathers become

scattered so that on that portion the patch is broken and irregular. This red crown-patch is very similar to that adorning the adult male of *Centurus uropygialis*, but is rather larger, extends further forward on the crown, and is more scarlet in color. On the throat, the usual red stripe is extended posteriorly very nearly to the yellow of the abdomen; back of its usual limits, however, the red becomes gradually duller, until it finally changes to a dull brownish hue. This red throat-patch also gradually widens posteriorly to near its extremity, being at the widest part more than half an inch broad. In all other respects the plumage of the bird is quite normal. The interscapulars are largely white centrally, each feather having a conspicuous longitudinal, broad, white stripe, but these white markings are almost entirely concealed when the feathers occupy their natural position; sometimes these white markings are, however, observable in specimens having the red of normal development. The belly is rather pale for Californian examples of this species, which are usually much brighter colored beneath than those from the interior. There is, however, much variation in this respect. The measurements are as follows: wing, 5.50; tail 3.80; culmen, 1.05; tarsus, .85.—R. RIDGWAY, *Washington, D. C.*

On an Addition to the Ornithology of South Carolina.—Toward the close of the afternoon of Dec. 9, 1886, a small flock of over a dozen Blackbirds, accompanied by a straggling company of Meadowlarks, was noticed on a barren field in the suburbs of Chester. At the distance, they appeared to be Purple Grackles. Hoping to find an example of *caeus* among them, I went in pursuit, but, as the 'Larks' were inclined to linger behind, I had considerable difficulty in getting within shooting distance. After a time, however, I succeeded in temporarily separating them, driving the Blackbirds into a tree. Three specimens were secured, but of a kind wholly unexpected—not Bronzed, but Brewer's Blackbirds (*Scolecophagus cyanocephalus*). On the following morning two additional examples were captured, making a total of three males and two females. That these birds were waifs and strays, mere accidentals, seems improbable. Their numbers and condition (those taken were very fat), considered in connection with the demonstrated tendency of certain species of the West to extend their migrations to the South Atlantic States, appear to indicate that they were irregular migrants, borne eastward on the cold wave which struck Chester on the night of December 3, covering the ground for a week with snow.

To what extent the list of South Carolinian birds is capable of expansion can only be conjectured. The experiences of the past few years have taught us to expect almost any migratory bird inhabiting the Mississippi Valley. If we are ever to arrive at a 'Complete Catalogue,' if such a thing be attainable, it will only be through persistent use of the gun, and by careful and systematic examination of many specimens of every species having a western sub-specific representative.—LEVERETT M. LOOMIS, *Chester, S. C.*

Occurrence of *Calcarius ornatus* in Maine.—Early on the morning of August 13, 1886, while sitting in a blind on the Little River marshes, near Pine Point, Me., I noticed a small bird flying restlessly about overhead. From its peculiar flight and notes I took it to be a Titlark. Rather surprised to see one so early in the season, I watched it carefully, and, when it finally alighted not far away, I went after it. My attempt to secure it was unsuccessful, however, owing to my gun missing fire, and it flew off to the other side of the river, where I lost sight of it. Several hours later, while returning by the same place, I saw what was presumably the same bird, flying about from one place to another. Finally I fired at it, as it rose from the grass before me, and had the pleasure of seeing it fall. I must confess that on picking it up I was completely at a loss to know what it was. I did not feel sure regarding it till several months later, when looking over one day, in company with Mr. Chadbourne, the large series of *Calcarius ornatus* in the Agassiz Museum at Cambridge, we discovered one specimen which matched my bird in every particular. Mr. Brewster, to whom I showed it later, identified it as *ornatus* without doubt. The bird is of very small size, and, as far as plumage goes, lacks, with the exception of the tail-markings, every sign of belonging to this species. It is apparently a young male, though the sex could not positively be determined.—JOSEPH L. GOODALE, *Cambridge, Mass.*

Object of the Shrike in Impaling its Prey.—I see that in Coues's 'Key to North American Birds' it is said to be still a puzzle to know what the Shrike intends by sticking insects and small animals on thorns. The explanation seems easy enough to me, and I give it for what it is worth. The Shrike, like many other birds and animals of prey, seems inclined to kill as long as there is opportunity, regardless of being able to use. The Shrike, not being fitted in claws or beak for tearing, as Hawks are. I think fixes its prey on thorns for the purpose of giving it a greater purchase in tearing it to pieces. I have been watching them often lately along the line of the railroad where they make use of the barbs on the wire fences for impaling the large grasshoppers they seem mostly to feed on. I often see them catch three or four in succession, but I think they rarely use more than one, and grasshoppers being so plentiful at this season I do not think that Shrikes ever come back to them, though they may do so in winter.—JAMES WHYTE, *Houston, Texas.*

Additional Occurrences of the Connecticut Warbler in Maine.—On seeing Mr. Merrill's note in the July number of 'The Auk' (Vol. III, p. 413) last summer, on the status of the Connecticut Warbler in Maine, I was reminded of a bird which I had taken in September, 1885, at Saco, which I had supposed to be of this species. At the time of reading the note I was away from Cambridge, and, being unwilling to send any communication regarding my bird until I had examined it again, was obliged to wait until October. Before that time, however, I had the pleasure of taking two more specimens at Saco. The first was taken September 8,

in a maple swamp, not more than twenty yards from where the specimen of the previous year was secured. The other was shot September 15, in a dry blueberry heath, on a pine tree, where it seemed to be feeding. To make certain in regard to their identity I have just shown the three skins to Mr. Brewster, who pronounces them undoubted *Oporornis agilis*. — JOSEPH L. GOODALE, *Cambridge, Mass.*

The Brown Thrush laying in the Nest of the Wood Thrush. — As the present season has proved to be prolific in birds laying large sets of eggs, I was induced to look into a nest of a Wood Thrush, from which the female was with difficulty driven off, when, in addition to her own clutch of four eggs I was very much surprised to see two typical eggs of the Brown Thrush, which, I believe, is the first record of the kind. The nest was placed in a maple, about three feet from the ground, in a quite thick ravine very seldom frequented; so this occurrence cannot be placed to the pranks of some boy. Again, the Brown Thrush is not common in this vicinity, and its nest is quite a rarity, so that any boy of 'birds-eggs-collecting proclivities' would have been more apt to keep the eggs than to place them in another nest, which might not have been the case had the species been a Robin, Catbird, or some common bird. Near the spot where this nest was found a Brown Thrush was heard singing, but all efforts to find its nest were fruitless. The eggs of the Wood Thrush proved to have been incubated about seven days; those of the Brown Thrush not over two or three days. This unique set was taken June 5, 1886, and is now in the collection of the American Museum of Natural History, New York. — H. B. BAILEY, *South Orange, N. J.*

Capture of Three Rare Birds near Hartford, Conn. — *Ardea egretta*. AMERICAN EGRET. — A bird (sex unknown) of this species was shot in this vicinity Aug. 14, 1883. Two or three more were reported seen near here in the same month, but I can vouch for the authenticity of only the one mentioned above.

Charadrius dominicus. AMERICAN GOLDEN PLOVER. — I have a young male of this species in my collection which was shot Oct. 24, 1885, as it was flushed from a stubble field in this locality. The bird was alone, and in skinning it I found that it was in good condition.

Phalaropus lobatus. NORTHERN PHALAROPE. — I shot a female about a mile below Hartford, Sept. 27, 1886. It appeared quite tame and was flushed from the water with considerable difficulty. The plumage was perfect but on dissection it proved to be in very lean condition. — WILLARD E. TREAT, *East Hartford, Conn.*

Piranga rubriceps and *Tringa fuscicollis* in California. — I have just received a specimen of *Piranga rubriceps* from Mr. W. G. Blunt, of San Francisco, which he shot at Dos Pueblos, Santa Barbara Co., Cal., and mounted at the time, which was about 1871, he thinks. The bird has not since been out of his possession. It was alone when shot.

Mr. Blunt assures me that there is positively no doubt of the fact.

In looking at a case of his birds this specimen at once attracted my attention as a strange looking Tanager, different from any I remembered to have seen, and on inquiry I learned its history, as above given.

As far as I can learn this is a bird new to California, and also to the United States. If so it seems worthy of record. (No. 2697, ♂, Coll. of W. E. B.)

In 1884 I took east with me a specimen of *Tringa fuscicollis*; it was so named by some good authority, Mr. Ridgway I think. By the A. O. U. Check List it appears that it has not been found in California. It was a solitary individual, shot by myself on the marsh near Oakland, Cal. No. 1080. ♀, Oct. 8, 1883. Iris dark brown, feet and legs yellow. Coll. of W. E. B. — WALTER E. BRYANT, *Oakland, Cal.*

CORRESPONDENCE.

[Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.]

Scarcity of Adult Birds in Autumn.

TO THE EDITORS OF THE AUK:—

Sirs: Between the first of September and the twenty-second of November of this year I collected 367 bird skins; 258 during the month of October in Colorado, and the remainder in Kentucky. Of this aggregate of 367, 348 were birds of the year. The question at once presents itself, whence this glaring discrepancy? Where were the adult birds? I made no effort to secure young birds (in nine cases out of ten the young fall bird is indistinguishable from the adults by external characters), but 'took them as they came.' It may be asked how I determined the birds in question to be 'birds of the year.' For several years I have noted that nearly all the birds shot by me in the fall had skulls that were more or less incompletely ossified, and in 1885 I began to systematically examine the skulls and other skeletal parts with the view of determining the relative age of the birds, assuming that those individuals exhibiting a soft or incompletely ossified skull, must have been hatched during the immediately preceding breeding season.

Of the nineteen adult birds collected between the dates above given, eleven of them were species resident where collected.

Apparently the only legitimate inference from the above facts is, assuming my method of determining the relative age of birds correct, that the adults migrate as soon as they are relieved of the care of the young birds, and that the latter form the great bulk of the autumnal migration stream. Opposed to this theory we have the *negative* evidence that ex-

tremely few adult 'transients' are recorded as observed in July and August. Are there not some members of the A. O. U. who can throw light upon the subject?

Respectfully yours,

CHARLES WICKLIFFE BECKHAM.

Bardstown, Ky., Nov. 23, 1886.

Classification of the Macrochires.

TO THE EDITORS OF THE AUK:—

Sirs:—Once more I must ask your indulgence in the matter of a little space, as I have a word or two to say in regard to Mr. Lucas's paper on 'The Affinities of Chætura' which appeared in the last number of this journal (Oct., 1886), and from the reading of which I find that I have on my hands another ornithologist who takes exception to the further separation of the Cypseli and Trochili, more than is now generally agreed to by the majority, perhaps, of systematists in their schemes of classification.

It is not my intention on the present occasion either to add or subtract anything to what I have already contributed to the morphology of the Macrochires, for by so doing I would forestall the conclusions of my further researches in this matter that I now have in hand.

Mr. Lucas says, "Nevertheless, until still more evidence to the contrary is adduced, I will hold fast to Huxley's union of Hummingbirds and Swifts" (p. 444).

Now at the present writing I have been over two years in a position where I have not been able to avail myself of either the libraries or the museums, and have at my command but a limited working field library; so that it is quite possible that Professor Huxley may have recently changed his views in regard to the taxonomy of the Macrochires, and I not have known of it. But, I do know that in 1867 he wrote the following sentences, to wit: "In their cranial characters, the Swifts are far more closely allied with the Swallows than with any of the Desmognathous birds, the Swift presenting but a very slight modification of the true Passerine type exhibited by the Swallow. No distinction can be based upon the proportions of the regions of the fore limb; since in all the Swallows which I have examined [*H. pacifica*, *H. riparia*, *H. rustica*, and *H. urbica*], the manus and antibrachium respectively, greatly exceed the humerus in length, though the excess is not so great as in *Cypselus*" (P. Z. S., Apr. 1867, p. 456). And again in the same paper he says "The *Cypselidæ* are very closely related to the Swallows among the Coracomorphæ" (p. 469). Mark you, Professor Huxley here says "very closely related." In other words, at the time that this eminent biologist formulated his 'Classification of Birds' in the memoir in question, he evidently believed that Swifts were but profoundly modified Swallows. Believing this as he did, I am the more

surprised that he, in the same paper, said, "This group [Cypselomorpha] contains three very distinct families—the *Trochilidae*, the *Cypselidae*, and the *Caprimulgidae*" (p. 469). It is hard to say what Professor Huxley's views in the premises would be now, as I am inclined to think he has in no way modified them in print since 1867, and that is quite a long time ago.

For one, I do not place the reliance upon the structure of the bony palate in birds as a taxonomic character that Huxley did then, and a number of classifiers have done since. It rather dilutes its importance to find such a bird as *Caprimulgus europæus* with its maxillo-palatines well separated in the median line, while another Caprimulgin bird, as *Chordeiles acutipennis texensis*, for example, has these processes meet each other for a considerable distance in this locality, where they may even in old individuals fuse together (compare Huxley's figure of the former type and mine of the latter).

Some of the most interesting parts of Mr. Lucas's article are to be found in the foot-notes. For instance, in one of these (p. 446) he says, "In Dr. Shufeldt's figures of *Panyptila* and *Tachycineta* the maxillo-palatines are imperfect." From a reading of the article, I am rather inclined to think that Mr. Lucas, at the time he penned this opinion, had skeletons of neither of these birds before him; indeed, I do not think there was a single alcoholic of either of these forms in the Collection of the Smithsonian Institution at the time, and there are just a few of these birds about me here in New Mexico! At any rate, these two figures are exactly double the size of life; are based upon careful comparisons of abundant material of the kind in question; and are absolutely correct in every particular.

Still keeping clear of some dubious anatomical deductions in my critic's paper we find another foot-note at the bottom of page 447, wherein he says: "Among birds the characters afforded by the sternum are so important that I must confess myself a little surprised that Dr. Shufeldt should so readily reject them." Let me say here, in explanation of this, that my studies of the skeletons of the Auks shook my faith a little in the value of the character of the xiphoidal extremity of the sternum, and the 'notching' it may assume.

The Smithsonian Institution has had in its hands for two years now, for publication, an extensive work of mine, treating largely of the osteology of American birds, and illustrated by over 400 figures. When this work appears Mr. Lucas will find that I describe two sterna there, from two individuals of the *same species* of Auk, wherein one is extensively notched on either side of its posterior end, while the other is absolutely entire, and no evidence of a notch there at all. In the same place I have endeavored to show how this may come about, but no more of it here, for I hope the volume I have just referred to will be published, and then my views on this question will be better understood. As it stands now the work has proved too extensive for the slender means of the National Museum to handle at one effort.

Of course, in recording what I have just done in the preceding para-

graph, I by no means wish it to be understood that I in any way under-rate the significance of the 'notching' of the xiphoidal end of the sternum, in the *vast majority* of the class Aves.

One is both surprised and refreshed at the information conveyed in the last foot-note of Mr. Lucas's paper (p. 451);—surprised from the fact that the osteologist-in-chief of our great Government Museum at Washington should be, up to the time of his writing the article he contributed to 'The Auk,' ignorant of the opinions Dr. Parker has so ably presented us with in his matchless "treatise on the Skull of *Ægithognathous* Birds"; and refreshed to think that that institution can lay claim to a mind among its admirable staff of workers, in which it is evidently possible for opinions to evolve, *de novo*, which compare so favorably with those held by living masters in morphology.

Very respectfully,

R. W. SHUFELDT.

Fort Wingate, N. Mex., 16th November, 1886.

NOTES AND NEWS.

At the recent meeting of the American Ornithologists' Union in Washington, during the discussion of the subject of bird protection, Mr. F. S. Webster spoke of the attitude of the members of the Union toward taxidermists, which seemed, he thought, one of enmity rather than of friendship. Mr. Brewster, in replying, said he was glad the matter had been brought up, as it was evident that there was a serious misapprehension of this subject on the part of taxidermists. He stated that honest taxidermists as a class were respected by ornithologists, who looked upon them as efficient and indispensable allies, and that the prevalent impression to the contrary was the outgrowth of malicious remarks by certain enemies of the Union. Mr. Brewster believed in encouraging true taxidermy, and in granting collecting permits to all honest taxidermists. What ornithologists wished to prevent was the wholesale traffic in birds for commercial purposes by men who had no claim to be ranked as taxidermists, though they so styled themselves. It was only the abuse of the privilege of collecting that ornithologists were striving to prevent.

Mr. Webster replied that the reason taxidermists felt aggrieved was the wording of the law proposed by the A. O. U. Committee on Bird Protection, which was such as to practically prohibit even legitimate taxidermy. He would be glad to see the Union take a stand in the matter that would remove the existing feeling of antagonism between ornithologists and taxidermists.

The President being then called upon to express his views on the matter in question, stated that the proposed law was not intended to cripple

legitimate taxidermy, but mainly and primarily to prevent destruction of birds for millinery purposes. Conscientious, honest taxidermists, would have no difficulty in obtaining permits to collect birds for scientific or other legitimate purposes under the proposed law. It was certainly not the intention of the committee to in any way impede or prohibit the legitimate work of the taxidermist. He spoke in high praise of their services to ornithology. He was sure no feeling of antagonism on the part of the Union toward taxidermists as a class existed, but only against certain obnoxious persons, who had rendered themselves so by their wholesale slaughter of birds for gain, and who were not taxidermists in any true sense. He had found taxidermists, as a rule, to have too much of the spirit of the naturalist to be willing to become caterers to the milliner.

At the meeting of the Ridgway Ornithological Club held August 12, 1886, the following papers were read: 'Spring Notes from Cook and Lake Counties, Ill., and Lake Co., Ind.,' by Geo. L. Toppan; 'The Future of American Ornithology,' by R. W. Shufeldt. A number of donations of bird skins, and eggs, and of ornithological literature, from Resident and Corresponding members were announced. At the meeting held September 9, 1886, Mr. J. G. Parker, Jr., read a paper on the 'Ornithology of Sauk and Columbia Counties, Wis.,' which he illustrated with skins of the rarer species observed. At the meeting of October 14, 1886, Mr. H. K. Coale read a paper by Mr. Robert Ridgway entitled, 'List of the Birds found breeding within the corporate limits of Mount Carmel, Ill.' The subject of publishing the proceedings of the Club was discussed and favorably considered, and will be definitely decided at the next meeting.

At a meeting of the California Academy of Sciences, held November 1, 1886, a paper was read by Mr. Walter Bryant on the 'Ornithology of Guadalupe Island,' embodying the results of Mr. Bryant's ornithological work during several months spent at this interesting locality. The paper will soon be published in the Society's 'Bulletin.'

THE A. O. U. Committee on Bird Protection published its second 'Bulletin' on November 11, 1886, in 'Forest and Stream.' It was immediately issued separately as an eight-page pamphlet, uniform in size and style with its 'Bulletin No. 1.' The present 'Bulletin' is devoted to 'Bird Protection by Legislation,' and is especially intended for distribution among the legislators of the different States, in the interest of securing better and more nearly uniform legislation for the protection of birds. It contains the recently enacted New York State law on this subject—essentially the same as the law drafted by the A. O. U. Committee and published in its first 'Bulletin'—with extended explanatory comment respecting the intent and scope of its leading provisions, some of which, owing to obscure phraseology, had been fallaciously interpreted. This is followed by a new draft by the Committee, amending in a few particulars their former one, with which, however, it agrees in all essential features. The age qualification of the former draft, and of the New York law, in refer-

ence to applicants for collecting permits is omitted, the other restrictions being deemed sufficient to prevent the granting of permits to persons not properly entitled to receive them. The penalties for the infringement of the law are increased, and one-half of the fines imposed for infringement of the act are awarded to the informant or prosecutor. Accompanying the draft are suggestions in relation to the manner of securing the enforcement of such laws. The 'Bulletin' also contains an abstract of the report of the Committee to the American Ornithologists' Union, some account of the work of the Audubon Society, and other matter relating to the general subject of the Committee's work.

The Committee having been continued by vote of the Union, and its report for last year accepted with thanks, its work will be carried on with vigor through the coming year, to facilitate which the Committee will probably increase its membership.

MR. M. ABBOTT FRAZAR is on his way to Lower California where he will spend an indefinite period collecting birds and eggs of the region for Mr. William Brewster. It is Mr. Brewster's intention to have the entire peninsula, with its neighboring islands, thoroughly explored by Mr. Frazar.

MR. HERBERT H. SMITH has recently returned from Brazil with large collections of natural history specimens, accumulated during five and a half years devoted to collecting in the interior of Brazil. Although Mr. Smith gave his attention especially to insects, of which he brought home some 400,000 specimens, he made collections of much importance in other departments of natural history. His collection of birds, numbering about 450 species and 7000 specimens, was made chiefly in the Province of Matto Grosso, on the headwaters of the Paraguay River, a region hitherto little explored. It is doubtless the largest collection ever brought by one person from so limited an area in South America; and besides throwing much light on the ornithology of this particular district, it must contain some novelties. Mr. Smith's collections are now at the American Museum of Natural History, New York, where, it is to be hoped, a large part of them will permanently remain. The birds have been placed in the hands of Mr. J. A. Allen for study and determination, who will in due time publish an annotated list of the species.

MR. WILLIAM BREWSTER is about to build a small private museum on his place at Cambridge. It will be of brick and thoroughly fire-proof. It will be arranged to accommodate a large collection of bird skins, nests and eggs, with limited case room, also, for mounted specimens.

MR. CHARLES H. TOWNSEND has just sailed for Yucatan and, under the auspices of the U. S. Fish Commission, will spend several months in natural history work in that country and some of its neighboring islands, devoting a considerable portion of his time to ornithology.

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ADDITIONS TO THE BIRDS OF VENTURA COUNTY, CALIFORNIA.

BY J. G. COOPER, M. D.

THE 'List of Birds observed in Ventura County,' by Professor B. W. Evermann, in 'The Auk' for January and April, 1886, compiled from the observations of two years, is very full and probably nearly exhaustive for a short period of observation, comprising, as it does, 202 species, only one of which is considered doubtful by the author, and that one (*Empidonax obscurus*) was obtained by myself. It is, however, doubtful whether such a county list could ever be made complete without including ninety per cent of the birds known to inhabit California, or about 325 species. This doubt arises from the fact that Ventura County is situated within the winter range of most of the southward migrants, and also the range northward of most of the southern group of summer visitors, while it extends upward from the ocean level to 8500 feet altitude on Mount Pinos, near its extreme northeast corner.

The chief utility of such a list is, therefore, not to show what species occur in the whole county, but their modes of occurrence and other habits within a limited portion where the author lived. While he worked diligently and made several additions to the known range of certain species, as well as to their known habits, he probably did not observe two-thirds of the species to be found in the county limits, and yet it is one of the smaller counties of

California, with much less variety of surface than several others present.

The following species of his list were not observed by me during my residence of fourteen months at Saticoy, in 1872-73, viz. :

Phalænoptilus nuttalli,	Dendroica nigrescens,
Trochilus alexandri,	Dendroica occidentalis,
Trochilus costæ,	Geothlypis macgillivrayi,
Empidonax hammondi,	Cinclus mexicanus,
Cyanocitta stelleri frontalis,	Oroscoptes montanus,
(Corvus americanus),	Parus atricapillus occidentalis,
Pooecetes gramineus confinis,	Regulus satrapa olivaceus,
Phainopepla nitens,	Myadestes townsendii,
Dendroica gracæ,	Hesperocichla nævia;

in all 18 species, and chiefly those frequenting the hills. The Professor calls the first part of his article "birds observed" and the second part "birds obtained" but does not positively state that he preserved all the species, and a doubt therefore exists as to the specific identity of a few, viz. :

Uria troile californica,	Corvus caurinus,
Larus cachinnans,	Dendroica nigrescens,
Grus mexicana,	Dendroica occidentalis,
Chordeiles virginianus henryi,	Parus atricapillus occidentalis.
Corvus americanus,	

He has also admitted at least two species which he did not obtain within the county—*Ptycorhamphus aleuticus* and *Cephus columba*, stated to be "rather common about the Santa Barbara Islands," some of which belong to other counties. In a late description of Ventura County, only the nearest island, Anacapa, and the most distant, San Nicolas, are said to belong to it, so that specimens from the other four islands would not be within its political limits.

The fact of their occurrence on the islands is, however, in itself, almost positive proof of occurrence in Ventura County, since they wander throughout the channel between the mainland and the islands, and if not coming ashore voluntarily, are washed ashore after winter storms which kill many of the old or diseased sea-birds. But the same cause will also bring ashore, at times, all the species known to inhabit the islands, and we may, therefore, safely add

Brachyramphus marmoratus,	Puffinus creatopus,
Brachyramphus hypoleucus,	?Puffinus stricklandi,
Fulmarus glacialis glupischa,	Oceanodroma melania,
Fulmarus glacialisoides,	?Oceanites oceanicus,

found by myself and others, two species of which are a little doubtful, though representing species observed.

Following the same reasoning we may safely assume that all the species found in Santa Barbara County occur also in Ventura, as the former county lies entirely west of Ventura, and extends north of it only a few miles, thus being within the same degrees of latitude and bordering on the "Santa Barbara channel" also, which runs there east and west. We thus find the following to be added from my own collections at Santa Barbara :

Urinator lumme,	Botaurus exilis,
Pelecanus californicus,	Himantopus mexicanus,
Oidemia americana,	Macrorhamphus scolopaceus,
Oidemia perspicillata,	Heteractitis incanus,
Branta nigricans,	Arenaria interpres;

and from Mr. Henshaw's Report,

Phalacrocorax pelagicus resplendens,	Rallus obsoletus,
Merganser americanus,	Porzana jamaicensis,
Clangula hyemalis,	Ammodramus savannarum per- pallidus;

all swimmers or waders except the last: total, 24 to be added from the westward.

Mr. Henshaw traversed Ventura County from west to east, but his report does not specify the localities within its limits where any species were collected additional to the list, and travelling in the driest months he saw very few of interest between the coast and the "Tejon Mountains," which lie partly within the the northeast corner of the county. There a different group of birds was met with, between 4000 and 8500 feet, at Mount Pinos.

As Fort Tejon is only about ten miles from the boundary of the county, and in the mountain region, its birds must fairly represent the group inhabiting that region. I have therefore quoted from the collection made there by John Xantus in 1857-58, published in the 'Proceedings' of the Philadelphia Academy of Natural Sciences by Professor Baird. He obtained in all 144 species, of

which ten or fifteen were probably obtained at the lakes in Tulare Valley, being waders and swimmers, only one of which, *Dendrocygna fulva*, has not been found on the coast. Omitting this, the land birds are,

Syrnium occidentale,	Spinus pinus,
Nyctala acadica,	Vireo solitarius cassini,
Trochilus calloipe,	Helminthophila ruficapilla gut-
Contopus borealis,	turalis,
Picicorvus columbianus,	Certhia familiaris americana,
Carpodacus cassini,	Parus gambeli.

To these we may add Henshaw's Tejon Mountain birds, *Dendragapus obscurus*, *Xenopicus albolarvatus*, *Vireo solitarius plumbeus*, and *Sitta pygmaea*—making fifteen not found in the lower western tracts, though some of them are reported from Santa Barbara by Streater, as rare winter visitors.

I may here refer to the list of birds lately published by C. P. Streater in the 'Ornithologist and Oölogist' for April, May, and June, 1886. He may be in error in a few cases in identifying the species, such as *Tringa canutus*, *Piranga rubra cooperi*, *Polioptila plumbea*, and *Turdus ustulatus swainsoni*, and longer observation will probably change his opinions as to the habits of some species, but still the list adds one water and one land bird to those before known in the region. I could add several to the birds from migratory species found in counties farther south, which must pass through Ventura County, but will leave them out at present.

Though not admissible as birds of Ventura County, those obtained at Santa Barbara, especially the land species, are almost certain to be found in the former county.

The collectors on the Pacific R. R. Surveys in 1853-55 traversed the east and west ends of the county, which was not then separated from Santa Barbara County, but I have not found any additions to the list in their reports, nor does Dr. Heermann's account of collections at Fort Tejon contain any.

The absence of lakes and deserts in Ventura County deprives it of the species found only in such localities in Kern County on the north and Los Angeles County on the east, except as stragglers, so that we cannot assume that any of them are found in it until actually recorded. The 24 seashore birds, and 15 of the mountain fauna are, however, without doubt, to be included in the list.

My own additions to the Ventura County avifauna have nearly all been published as from Southern California. Some references will be given to the various works in which they are mentioned when not of easy access.

I collected chiefly near the village of Saticoy, eight miles east of San Buenaventura, and six or seven from the nearest part of the seashore. The Santa Clara River runs half a mile distant, but is dry in summer for seven or eight miles along that part of its course, leaving a wide, sandy and gravelly bed, destitute of vegetation except on a few higher patches where small poplar and willow trees grow, with low shrubbery, and which become islands in the high water of winter. Some sandhills along this portion also sustain thickets of low shrubbery, much like that of the desert regions east of the county. At Saticoy, however, about 30 feet above the river-bed, springs issue from the edge of the 'mesa' or terrace for half a mile, constant in summer, and forming a considerable marsh, about half of which was then covered by willow groves, thirty or forty feet high, and uniting, the waters form a brook large enough to run a mill at all seasons, discharging within a mile, into the bed of the river. From the river bed the valley slopes gently upward to the hills of the 'Sulphur Range' on the north, rising about 200 feet in three miles, and is naturally prairie land, producing no trees. At that time about a third of the valley was cultivated in grain and young orchards; but these were still too small to bear fruit or to have any influence on the birds. The hills northward were also grassy, with scattered oaks and other trees in the cañons between. The Saticoy springs furnished the only water in summer, and the only tree shelter for a circuit of three or four miles, the brooks running from the hills drying up nearly to their sources. About three miles east of Saticoy the Santa Clara River runs permanently and a grove of poplars and willows lines its marshy shores for several miles. Near this grove was the oldest orchard in the valley, the trees quite large and productive, forming an attraction to many birds that eat the fruit and build in the trees. In my notes on birds I call the orchard and grove referred to East Grove. A water-ditch was dug from the river above this grove, intended to carry water to San Buenaventura, but being too small the water was all used by the time it got a mile or two west of Saticoy, and had little if any effect on the prairie birds' habits.

The old Indian-Spanish natives that formerly lived at Saticoy, had also cultivated a thicket of *Opuntia tuna*,* a small vineyard, and a few pear trees on the edge of the marsh.

About three or four miles west of Saticoy another grove of poplars, willows, and stunted live-oaks, partly open and partly crowded with dense shrubbery, lay along the south bank of the river for three miles, and was the most productive bird-hunting locality I found in the valley, though many species of the hills were rarely seen there. I have called this West Grove.

I also made several trips into the hills, once up to the pine region, about 3000 feet altitude, finding the same birds mentioned by Professor Evermann, with the exceptions before noted. I also visited the seashore often, and made two trips across the level plain south of the river to the west end of the Santa Monica range of hills at Point Duma. No birds were seen there, however, that are not also found in other parts of the surrounding region.

1. *Tantalus loculator* (188). Small flocks or families came to Saticoy in June, both of 1872 and 1873; probably broods raised farther east, and possibly along Santa Clara River. They doubtless breed in San Joaquin Valley, as some are shot there every year. After leaving the nest the broods of young wander, and I have several times seen them flying at midday in wide circles high over San Francisco Bay. I have also seen one from Santa Barbara. One was shot some years since at San Leandro near Haywards, having incautiously alighted on a shade tree by the roadside; and these young birds always seem destitute of that natural fear of man so necessary for their safety. Like many other large birds of California, they will soon become extinct there, unless they acquire this protective instinct.

2. *Rallus virginianus* (212). I shot several of this species on the marsh at Saticoy, and heard them during the whole year, so they no doubt breed.

I did not see the large *R. obsoletus* there, but as it is chiefly a salt-water bird, and has been obtained at Santa Barbara, also by myself at San Pedro Bay (where it breeds), it is doubtless to be found near the seashore in Ventura.

3. *Porzana carolina* (214). Quite common with preceding (212). I shot one in winter, but doubt if it breeds there.

4. *Phalaropus lobatus* (223). A flock was seen in a pond near the seashore in July. A few occur in such ponds along the coast in every month except, perhaps, June, but I suspect they are barren birds. I shot one in perfect nuptial plumage in San Diego County, May 1, 1872, the only one seen there, about fifteen miles inland.

*A Mexican species, much larger than the native kinds found on the dry plain.

5. *Totanus solitarius* (256).—I saw some of this species in winter, near fresh water streams.

6. *Symphemia semipalmata* (258).—This was a common shore bird near the salt marshes in winter, as elsewhere on the coast of California, and I think some remain to breed.

7. *Ægialitis semipalmata* (274).—Also found on the seashore in winter.

8. *Ægialitis montana* (281).—Small flocks came on the prairies near Saticoy from the eastward, and I shot several in December. They are also brought from Sacramento Valley in winter to San Francisco.

9. *Buteo swainsoni* (342).—I shot four of this species, chiefly in the West Grove, where they came in flocks in September. Only one was of the pale variety, which is rare near the coast. They remained common during the next summer and I saw one on its nest in the grove April 29; also several young about Santa Paula, July 8.

(See notes on the flocking of this species, and other remarks in the 'New Facts on Ornithology of California,' in Proc. Cal. Acad. Sciences, VI, 189.)

10. *Archibuteo ferrugineus* (348). I obtained two during the winter and saw many more, besides some in summer which probably had nests in the hills near by.

11. *Aquila chrysaetos* (349). Not rare during my residence, and I have several times been within fifty feet of them, both sitting and flying. One was also offered me that was shot in the wing near town. Their destructiveness to lambs causes them to be shot without mercy by farmers, and they are becoming scarce. Coming from the thinly peopled regions of the north, or the mountains, all these Raptores are slow in learning the fear of mankind.

12. *Falco mexicanus* (355). I did not obtain a specimen but saw what I thought to be this bird several times, generally distinguishable by its light brown color, and its habit of frequenting the dry prairies away from water. Common resident in Southern California.

13. *Falco peregrinus anatum* (356). I shot one in the West Grove that had nearly as pale brown color as the preceding. I have passed in a carriage within ten feet of one on the Los Angeles plains, where it was so intent on devouring a Duck it had captured as to pay no attention to our team.

14. *Falco columbarius* (357). I shot three of this species in winter, all agreeing with the typical form.

15. *Pandion haliaetus carolinensis* (364). I did not think Fish Hawks worth shooting, but saw a few near the coast where they were then plenty at all seasons, and little molested.

The seven Raptores here given, but not seen by Evermann in Ventura, must have become much rarer or more wary since I lived there.

16. *Sphyrapicus ruber* (403). One specimen shot November 7, near Saticoy, was all I met with.

17. *Colaptes auratus* (412). I shot one in the West Grove in November, and as it is everywhere rare on this coast, it may be considered a

winter straggler, possibly from Alaska. (See 'New Facts,' etc., for further particulars; also the Appendix to Vol. III, North American Birds, where several other of these Saticoy birds are mentioned.)

18. *Chordeiles texensis* (421). A rare bird in the valley, and probably this is the limit of its northern range. I shot one April 15, in the West Grove, of such large size that it would have been taken for *C. virginianus*, if not distinguished by the specific marks, especially the position of the white wing-patches. Length, 9.12; extent, 22.25; wing, 8; tail, 4.60.

19. *Chætura vauxii* (424). Migrating flocks appeared April 22, 1873, at Saticoy, but did not remain, seeking the high pine woods at that season.

20. *Empidonax difficilis* (463). Arrived at Saticoy March 18, 1873, but none remained near there in summer, although, as Henshaw found them at that season in Santa Barbara and eastward, they no doubt breed in the hills near by.

21. *Empidonax pusillus* (465). First seen at Saticoy, May 22, and appear to be always late in arriving in California. They frequent the swamps at Saticoy with the last species, and are reported by Henshaw to build in similar willow groves at Los Angeles, though I have also found them in summer high on the mountains. They also breed in a willow swamp near Pleasanton, Alameda County.

E. obscurus (469). I mention this to confirm Evermann's belief in its occurrence, and the eggs he obtained are good evidence that it breeds. I found them only in winter, killing two on November 19 and December 14, besides seeing others, which makes it probable that a few winter there.

22. *Pyrocephalus rubineus mexicanus* (477). I shot two perfect male specimens of this brilliant subtropical bird in West Grove on October 21 and November 7. Seeing no more west of the Colorado Valley, except one near San Diego, I considered it a rare species near the coast, but one that probably breeds in the county. The two shot had but lately obtained perfect plumage, and seemed likely to be young from the same nest.

23. *Corvus corax sinuatus* (486). The Raven was very common, especially about sheep ranches, and some were killed while I was there for destroying lambs, so that they are no doubt scarce now. I once counted thirty soaring with Turkey Buzzards, above a sheep fold near East Grove, is is their frequent habit about midday, after feeding on dead sheep when the flocks had gone out for the day. A fine male, killed November 20, measured 23.40; extent, 46.30; wing, 16.25. I cannot but believe that this is the species taken for *C. americanus* by Evermann, while he took the latter for *C. caurinus*. Both being rather smaller in southern California than farther eastward, it was a natural mistake to make, though the habits of the Raven are very different from those of Crows. A pair of Crows shot November 6, at Saticoy, measured, ♂ 17.75; extent, 36.50; wing, 12.25; ♀ 17.50; extent, 35; wing, 11.75. They are thus of middle size between eastern *americanus* and northwestern *caurinus*. Mr. Henshaw also considers the Crows of this region different from *americanus* of the East, and calls them *caurinus*. I have before tried to show that all the West Coast Crows form one variable species (omiting the Raven).

24. *Spizella breweri* (562). I shot two from a small migrating flock of this species near East Grove, April 10, the only time I met with any, and I suppose, therefore, that they do not breed there. I never saw them elsewhere in Southern California, and noticed a marked difference from the *S. pallida* I got at Fort Mojave.

25. *Melospiza lincolni* (583). Not rare about Saticoy Grove in winter, where I preserved two. The newly-fledged young of *M. fasciata samuelis* is so similar, that, before shooting some, I thought *M. lincolni* had remained in summer, but have since found the nest of the latter only from 7000 to 9000 feet altitude in the Sierra Nevada.

26. *Passerella iliaca unlaschkensis* (585*a*). A few of this species wintered near Saticoy, and I preserved two, of which one, sent to Washington, was found by Mr. Ridgway to be intermediate between the northwestern and eastern varieties. (On the dates of migration of this and other birds here mentioned, see Proc. U. S. Nat. Mus. for 1880, pp. 241-251.)

27. *Helminthophila celata lutescens* (646). I shot one at Saticoy, and know it to be a constant resident in the brushy cañons among the hills of Southern California, but not easily distinguished at a distance from some other small birds, unless when its peculiar song is heard in the spring.

28. *Troglodytes hiemalis pacificus* (722). Three or more of this species remained in the willows at Saticoy all winter, and I preserved one. This is about its most southern range.

29. *Cistothorus palustris* (725). A few seen in the Saticoy marsh in winter only.

I may add a few notes on the breeding and other habits of some other birds in Evermann's List. Some of the island birds, especially burrowing species, are known also to breed in high bluffs on the mainland, such as border the northwest and southwest corners of the county. These 'probable' breeders are *Cerorhinca monocerata*, *Ptychoramphus aleuticus*, *Brachyramphus hypoleucus*, *Cephus columba*, etc. *Phalacrocorax pelagicus albociliatus* is not a 'probable' but a certain breeder on the islands, as I got eggs there. It also breeds on ledges of cliffs along the rest of the coast, as do many other water birds, but perhaps not within the county. *Anas boschas* is also a certain breeder in Ventura County. Of land birds *Amphispiza belli* is more than probably a breeder, as I found nests at San Diego, and breeding birds at Monterey and on the islands in summer, among shrubs along the sea-shore. *Penicea ruficeps* is also a summer resident on the hills, and on some islands, where they doubtless breed. *Vireo belli* I found a nest of at Saticoy in a low willow, as described in App. Vol. III. N. A. Birds. I have no doubt, also, that *Vireo huttoni* breeds, as it is a constant resident, though I never found the nest. (See Orn. of Cal., I 122, as to early laying at San Diego.)

Dendroica æstiva is also a certain breeder there, as I got several nests in the willow grove at Saticoy.

Turdus ustulatus I also consider a breeder, though I got no nests in the county, as I saw them in June in willow groves about Los Angeles, and they breed in abundance further north.

On May 10, 1872, I visited the mouth of the river purposely to see what birds bred there, but I found only a Mallard sitting among the cat-tails in the wettest part of the marsh, most of which seemed too dry for safety, as eggs on the ground would have been exposed to many wild animals' depredations. (Perhaps the eggs of *Anas boschas* were taken for those of *Aythya americana* by Evermann.) Cattle grazed all over the marshes.

I must remark, however, that the winter and two summers partly spent by me at Saticoy were uncommonly dry, and it is probable that wetter seasons may make the marshes along the twenty miles of low coast line more suitable for marsh-breeders. I could ride a horse through almost any part of them, the exceptions being some salt lagoons encrusted with the white crystals, and unfit for nests, besides being almost deserted by all the birds, those seen being only a few small Waders and Sparrows. As the river is subject to violent floods in winter, which change its channels and make new islands near the mouth, which becomes blocked up by sandhills in summer, from the waves beating on shore, the advantages for birds to breed there must vary much in different years.

DESCRIPTION OF A NEW SPECIES OF *RHAMPHO- CINCLUS* FROM ST. LUCIA, WEST INDIES.*

BY CHARLES B. CORY.

Rhamphocinclus sanctæ-luciæ, sp. nov.

SP. CHAR.—Top of the head dark brown, showing a dull rufous tinge; back and rump rufous brown; lores and below the eye black, shading into brown on the ear-coverts; throat and breast pure white; belly white; sides of the body chocolate brown; wing and tail dark brown; bill very dark, nearly black; legs olive brown.

Length, 8; wing, 3.10; tail, 3.60; tarsus, 1.15; bill, .85.

Habitat. St. Lucia, West Indies.

[* An author's edition of 250 copies of this paper was published Feb. 3, 1887.—EDD.]

The St. Lucia bird differs from that found in Martinique in having the upper parts brown instead of dark slate color. The brown marking on the sides of the body is of a different shade, the black on the lores is more extended, the tail-feathers are broader, and the bird generally somewhat larger.

The type is in my collection, No. 2500.

A LIST OF THE BIRDS COLLECTED BY MR. W. B.
RICHARDSON, IN THE ISLAND OF MAR-
TINIQUE, WEST INDIES.*

BY CHARLES B. CORY.

Myiadestes genibarbis Swain.

Margarops densirostris (Vieill.). This bird varies considerably in coloration in the different islands where it occurs. Specimens from Dominica are intermediate in color between *fuscatus* and the true *densirostris* from Martinique. The St. Lucia *Margarops*, a single specimen of which is in my collection, has the throat white, and the general color is darker than in the Martinique bird.

Margarops montanus (Vieill.).

Cinclocerthia gutturalis (Lafr.).

Mimus gilvus (Vieill.).

Thryothorus martinicensis Sclater.

Dendroica rufigula Baird.

Seiurus noveboracensis (Gmel.).

Setophaga ruticilla (Linn.).

Certhiola martinicana Reich.

Vireo calidris (Linn.).

Euphonia flavifrons (Sparrm.).

Saltator guadeloupensis Lafr.

Loxigilla noctis (Linn.). Much variation in coloration is shown in specimens from different islands, but a careful examination of a large series of specimens fails to show any constant characters by which they may be separated specifically.

[* An author's edition of 250 copies of this paper was published Feb. 3, 1887.—EDD.]

- Euethia bicolor* (Linn.).
Icterus bonana (Linn.).
Quiscalus inflexirostris (Swain.).
Elainea martinica (Linn.).

Blacicus martinicensis, sp. nov.

SP. CHAR.—Top of the head smoky black; back and upper tail-coverts dark olive; throat ashy, becoming tinged with tawny brown on the breast; belly dull rufous brown, extending upon the under tail-coverts; tail dark brown; upper mandible black; under mandible pale yellow; feet dark.

Length, 4.80; wing, 2.60; tail, 2.50; tarsus, .60; bill, .50.

HABITAT. Martinique, West Indies.

This supposed new species resembles *Blacicus brunneicapillus*, but has the rufous tinge paler on the underparts. The head and neck are darker. A larger series would determine more satisfactorily whether the Martinique bird is not a dark-colored wanderer from Dominica; but judging from the material before me I am forced to consider them distinct.

- Eulampis jugularis* (Linn.).
Eulampis holosericeus (Linn.).
Thalurania bicolor (Gmel.). Not precisely recorded from Martinique.
Bellona cristata (Linn.).
Crotophaga ani (Linn.).
Coccyzus minor (Gmel.).
Ceryle stictipennis Lawr. A fine adult female of this species was contained in the collection. It had not been previously recorded from Martinique.
Buteo latissimus (Wils.).
Falco columbarius Linn.
Falco caribbæarum (Gmel.).
Columba corensis Gmel.
Columbigallina passerina (Linn.).
Geotrygon mystacea (Temm.).
Geotrygon montana (Linn.).
Gallinago delicata (Ord).
Tringa maculata (Vicill.).
Ardea virescens (Linn.).
Nyctiardea violacea (Linn.).
Sterna anosthæta Scop.

THE NEW ENGLAND GLOSSY IBISES OF 1850.

BY F. C. BROWNE.

THE history of the first positively known appearance of the Glossy Ibis in Massachusetts and the second in New England (Linsley, Connecticut, 1843, being first) has been but imperfectly written, the latest and fullest account being that by Dr. Coues in Stearns and Coues's 'New England Bird Life.' Having memoranda made at the time on all the five examples then taken, and two of them having passed through my hands soon after they were shot, it seems to rest specially with me to supply the details that are lacking.

I was at that time in the junior class at Harvard College, and an active member and Curator of Ornithology of the Harvard Natural History Society, then a wide-awake students' society, under the presidency of Storer, son of the well known ichthyologist, Dr. D. H. Storer of Boston.

To avoid confusion I will number the specimens 1, 2, 3, 4, and 5, and from notes made at the time, from memory, and from subsequent inquiries, tell their story.

No. 1. The Cambridge, Mass., bird.—Entry in note-book: "May 8, 1850. Had the pleasure this morning of examining a fine specimen of a rare bird, the Glossy Ibis (*Ibis falcinellus* of Aud.). It was shot at Fresh Pond in this town by classmate E. Brown, from a flock of three. He will present it to our Society, a valuable acquisition. Audubon says, 'of exceedingly rare occurrence in the United States, but abundant in Texas'; and adds that he knows of but four shot in the United States. Nuttall says, 'a specimen occasionally exposed for sale in Boston market.' *The color of bill varies materially* from Audubon's description. He has it, 'bill black'; in this fresh-killed specimen it is very nearly clay color, with a tinge of green. Nuttall says 'greenish black,' which is nearly as far out of the way."

As Curator of Ornithology the bird came into my charge, and I took it to Ogden, then the leading taxidermist of Boston, for mounting. The older bird-men will remember Ogden's den in the attic of the old Tremont Temple, with the magnificent moose in the passageway. The building was burned soon after, Ogden losing everything.

“May 11. Meeting of the H. N. H. S. I announced the donation of the Ibis, with a few words as to its rarity, etc. Much satisfaction expressed. After the meeting Storer, Ball (a leading member), and self, talking the matter over, came to the conclusion to propose to the society that we present the Ibis to the Boston N. H. Society, as of great value there from having been obtained in the State, and as it would there be less liable to possible injury or loss.”

“May 24. Meeting H. N. H. S. Exhibited the Mounted Ibis. President introduced the matter of presenting it to the Boston Society, giving the reasons therefor; some opposition was naturally manifested, but it was voted so to do.”

“May 25. Delivered the Ibis to Dr. Cabot, Cur. Orn., B. N. H. S. He informed me that the specific name *falcinellus* was incorrect, our bird being two inches longer than the African species, with corresponding difference throughout. Donovan, he said, had named it *guarauna*.”

“Nov. 10. More light on the Ibis. Dr. Cabot said at a recent meeting B. N. H. S. in correction of a previous statement, that Bonaparte, in his ‘List’ of 1838, had separated our bird as *Ordii*.”

This example is still in good condition in the Boston Society’s collection.

No. 2. The Concord, Mass., bird.—This must have been shot at about the same time as No. 1. The first intelligence of it is entered “May 25. Mr. Thoreau tells me of a Glossy Ibis shot on the river in Concord by Mr. Melvin, and that he has given it to Mr. Holbrook, who has stuffed it.” I went up to Concord a few days after (that being my home at the time), identified the bird, and bought it of Holbrook. Took it to Ogden to be set up in better shape, and, as I had not then commenced a collection, gave him permission to dispose of it, if wanted. He soon after sold it to Dr. J. N. Borland, of Boston. Inquiring lately of Dr. Borland as to whether he still held it, he informs me that a few years ago he presented it to the Boston Natural History Society.

Nos. 3 and 4. The Middleboro’, Mass., birds.—Entry: “May 25. Calling at Ogden’s he told me that he had mounted two more Ibises, which came from Middleboro’. in this State.” There were *three* in this flock also, two being killed at one shot by a farmer living near Assawampsett Pond in that town, on May 6 or 7. They were purchased by Professor Jenks, then prin-

cial of the Academy there, mounted by him and placed in his cabinet. On the subsequent appointment of Professor Jenks as Curator of the Museum of Brown University, at Providence, R. I., he transferred them to the collection of that Institution, where they now are. (Jenks, in lit., 1886.)

No. 5. The Middletown, Conn., bird.—The circumstance of being recently enabled to give the exact date of this specimen, till now unknown, or at any rate not recorded, led me to look up the materials for this article. In examining a packet of manuscript, etc., which had been undisturbed since my college days, I came upon a newspaper clipping giving the particulars of the capture, over signature, as follows:

“Middletown, Conn., May 16, 1850 [*cf.* N. E. Bird Life, II, p. 256—Dr. Coues’s surmise as to date thus shown to be well founded]. “A Glossy Ibis, *Ibis falcinella* [*sic*] was shot at this place May 9, time of a high flood. Length, 28 in., bill 5 in., stands 18 in. high. The man who shot it remarked how tame it was. It has been carefully preserved, and is now in my cabinet. By the papers we learn that a similar bird was shot in Cambridge, Mass., on the 8th. Very rare in the United States; this is the first to our notice in Connecticut. Bonaparte was the first to show that *Tantalus mexicanus* of Ord was the *Ibis falcinella* of Europe.—J. BARRATT.”

This is undoubtedly the specimen spoken of by Merriam as being now in the Museum of Wesleyan University, Middletown.

In review, the probabilities are that a flock of six of these birds arrived in Southeastern New England on or about May 7; dividing into threes, one trio alighted at Middleboro’, and the other at Cambridge. Five of them were ‘taken in,’ as above, during the ensuing week. It is probable that the Middletown bird was the survivor of the Middleboro’ trio, and that the Concord bird (the only one seen there) was one of the two that escaped at Cambridge, leaving one unaccounted for, which very likely was wounded when his companion fell at Fresh Pond, and perished somewhere unobserved. The distance between the two extremes, Middletown and Concord, is only about ninety miles.

With the exception of two instances (Southern New Hampshire, 1858, and Nantucket, 1869—both solitary birds as far as known), twenty-eight years almost to a day elapsed before the Glossy Ibis again appears in New England records. May 4 and

5, 1878, three specimens were obtained on Cape Cod. This is the last visit recorded to date.

The confusion in regard to the Glossy Ibises of the United States, as partially indicated above, has been cleared up only at a comparatively recent date. *I. falcinellus* (now *Plegadis autumnalis*) is the species occurring from Florida northward along the Atlantic coast and in the West Indies, and is identical with the Old World bird. *I. guarana* (now *Plegadis guarana*) is the southwestern and western species; and the supposed new species, *thalassinus*, has proved to be the latter in immature plumage.

Note.—References not given in the above may all be found in Stearns and Coues's 'N. E. Bird Life,' II, p. 255 et seq.

A LIST OF THE SUMMER BIRDS OF THE PRESIDENTIAL RANGE OF THE WHITE MOUNTAINS, N. H.

BY ARTHUR P. CHADBOURNE.

THE following list of the summer birds found in the Presidential Range of the White Mountains, New Hampshire, is based on numerous trips of from one to three days made during the summer of 1884, and on two weeks spent in the 'Great Gulf' early in July, 1886. The number of species observed is very small, but the mere fact that so few were found is of interest, and the absence of many birds which are abundant in the country below makes the summer fauna of the mountains stand out in much stronger contrast. The eastern and northern slopes of Mt. Washington itself were the most carefully worked up, though one or two trips were made to the 'Northern Peaks' (Mt. Madison, Mt. Adams, etc.) in September, 1884. The southern and western slopes were not visited, excepting a small part of the old 'Crawford Bridle Path.'

Mr. William Brewster, who was with me on two occasions in 1884, and Messrs. C. R. Lamb and J. L. Goodale, who camped with me in Great Gulf in 1886, have generously placed their notes

at my disposal, and to them I am indebted for much valuable information.

The Presidential Range consists of Mt. Washington (altitude, 6293 feet) "the highest peak east of the Rocky Mountains, and north of the Carolinas," and of a number of lesser summits directly connected with it. As a rule these are only more or less exaggerated spurs of the great mountain itself, but on the northern side there is a lofty ridge, which is everywhere more than 4900 feet in altitude, and connects the high summits of Mt. Madison (5365 feet), Mt. Adams (5794 feet), Mt. Jefferson (5714 feet), and Mt. Clay (5553 feet) with each other, and also with Mt. Washington. At first this ridge runs almost north, then turning towards the east, it forms the northern and western walls of a huge gorge, called the Great Gulf, the southern wall of which is Mt. Washington itself. It was on this southern wall that we camped in 1886, having followed the bed of a mountain stream from a point a little above the fourth mile-post of the carriage-road down to an altitude of 3140 feet, which was the highest point at which we could find timber large enough to peel for bark. The carriage-road from the Glen ascends along the southern edge of the Great Gulf, but is entirely shut in by forest until within a few rods of the Half-way House (altitude, 3840 feet). Above this it passes through a tract of low matted spruce before it reaches the bare rocks and the region of hardy alpine plants and grasses, which extend to the summit of the mountain.

Tuckerman's Ravine, much smaller than the Great Gulf, is on the eastern side of Mt. Washington. At an altitude of about 4200 feet it is divided into two distinct parts by a rocky wall, only broken at one place where the stream from the 'Snow Arch' above passes through. The broad lower portion is covered with spruce and fir forest and contains two small ponds, the largest of these, called Hermit Lake, is at an altitude of 4100 feet. The upper part is surrounded on three sides by precipitous cliffs, in some places said to be one thousand feet high, and in their crevices grow a few alder bushes and many interesting plants and grasses. Under these cliffs the snow remains at the head of the Ravine until late in August; and early in July, 1886, it reached so far down that many of the alders were still almost covered with it and were as bare as in midwinter; while still lower they were in full flower and the grass and early spring plants were just beginning

to appear. A stream runs under this bank of snow, and cutting a deep cavern on its way, called the 'Snow Arch,' continues through the Ravine to join the Ellis River at the base of the mountain. Along the banks of this stream from the end of the Snow Arch to the spruce and fir forest below are dense alder thickets, which extend several rods back on each side, and are still farther prolonged by a dense growth of scrub spruce and fir nowhere over six feet high. This was a capital place for such birds as Black-poll Warblers, Juncos, and White-throated Sparrows, and they were more abundant here than at any other point visited, with the possible exception of the low forest opposite the Half-way House.

The changes in the fauna cannot be better seen than by walking up the carriage road from the Glen to the summit. For the first mile or two the forest is largely fine old growth hemlocks, spruces (*Abies nigra*), and birches, with cornels, elders, spiræas, and hazels along the roadside, and here such birds as the Hermit Thrush, Black-throated Blue Warbler, Black-throated Green Warbler, Canadian Warbler, and Red-eyed Vireo occur. Then there is a change, the fine old trees gradually give place to more and more stunted growth, the firs and spruces become more plenty, and at last almost entirely replace the hard wood trees, except on some slide or clearing where there is a dense growth of young birches and poplars; the cornels, elders, etc., disappear, and low birches, alders, and moose wood (*Viburnum lantanoïdes*) take their place. At the beginning of the fourth mile there are frequent patches of Labrador tea and mountain blueberries, while an occasional painted cup or alpine sandwort show that the lowest limit of an alpine fauna has been reached. There is a similar change in the birds. Olive-backed Thrushes still occur, but the harsh note of the Bicknell's Thrush is also heard, Black-poll Warblers begin to sing along the roadside, and the Hudson's Bay Chickadee becomes more common than the Black-capped.

About four miles by the carriage road from the base of the mountain the forest practically ceases and a dense growth of dwarf spruce begins. The trees are from two to six feet high and have their branches so matted and interlaced, that one is forced to walk over them if they are low, or to crawl under them if they are high, for it is impossible to force a way through.

Above the timber line this growth extends for a varying distance up the mountain enclosing rocky islands and promontories, where all of the common alpine plants are abundant.

The only birds found here are Juncos, Black-poll Warblers, and a few Yellow-rumped Warblers, Bicknell's Thrushes, and White-throated Sparrows; while on the bare lichen-covered rocks above nothing grows except the hardy alpine plants, shrubs, and grasses, and the common Junco is the only bird found, unless a solitary Black-poll Warbler or White-throated Sparrow has strayed up from the dwarf spruces below. From the timber line to the very top of the mountain the Junco continues in only slightly diminished numbers and for the last quarter of the road is usually the only bird seen.

The following birds are found from the base to the timber line and vary but little in abundance with an increase of altitude, if the surroundings are equally favorable: Ruffed Grouse (Yellow-bellied Flycatcher?), Blue Jay, Canada Jay, White-throated Sparrow, Purple Finch, Yellow-rumped Warbler, Bay-breasted Warbler, Blackburnian Warbler, Winter Wren, and Golden-crowned Kinglet.

1. *Actitis macularia*. SPOTTED SANDPIPER.—One was seen on July 8, 1886, in the Great Gulf on the West Branch of the Peabody River. It was only a short distance below our camp and at an altitude of about 3100 feet.

2. *Dendragapus canadensis*. CANADA GROUSE.—On July 3, 1886, one ran across the carriage road just in front of J. L. Goodale as he was walking up from the base of the mountain. Altitude about 3500 feet. No others seen.

3. *Bonasa umbellus*. RUFFED GROUSE.—Extends from the country at the base of the range to the tree limit. A female and brood of young found in the stunted birches near the Half-way House (altitude, 3840 feet) on July 26, 1884; and another brood was seen near the timber line on Mt. Adams on Sept. 2, 1884. Strange to say, none were seen by any of the party in 1886.

4. *Accipiter velox*, SHARP-SHINNED HAWK.—One was seen on July 24, 1884, sailing over the Half-way House.

5. *Accipiter cooperi*. COOPER'S HAWK.—On July 12, 1884, a pair were seen, and one of them shot, on the path from Tuckerman's Ravine to the carriage road up the mountain; and almost in the same spot another was seen on July 7, 1886. Altitude, 2640 feet.

6. *Falco columbarius*. PIGEON HAWK.—One was seen a little below our camp in the Great Gulf on July 8, 1886.

7. *Falco sparverius*. SPARROW HAWK.—On Sept. 2, 1884, two flew over the summit of Mt. Clay within a few feet of us as we sat there; and

the next day another came sailing down from above and disappeared in Tuckerman's Ravine, just as we began the descent.

8. *Pandion haliaëtus carolinensis*. AMERICAN OSPREY.—As we were descending the cone of Mt. Jefferson on Sept. 2, 1884, an Osprey flew slowly over a few yards above our heads. Altitude, approximately 5500 feet.

9. *Dryobates villosus*. HAIRY WOODPECKER.—One shot on July 11, 1884, about two miles by carriage road from the base of the mountain. Another was killed near the same place on July 26, 1884.

10. *Dryobates pubescens*. DOWNY WOODPECKER.—One killed almost at the base of the mountain on Aug. 12, 1884.

11. *Picoides americanus*. AMERICAN THREE-TOED WOODPECKER.—In August, 1884, an adult female and a young bird were shot below Hermit Lake, in Tuckerman's Ravine (altitude, 3960 feet). Another was seen but not killed at our camp in the Great Gulf on July 5, 1886.

12. *Ceophlœus pileatus*. PILEATED WOODPECKER.—This bird was not met with, but an old dead spruce full of its large and deep 'peck-holes' was found near our camp (altitude, 3140 feet). The holes were newly made and the chips and pieces of broken wood perfectly fresh.

13. *Chætura pelagica*. CHIMNEY SWIFT.—On July 3, 1886, one was given to me that had been caught alive in an unused chimney of the Half-way House (altitude, 3840 feet). The men at the house had never before seen any bird like it, and during our stay we saw no more; still one or two pairs might have nested there and yet have escaped notice.

14. *Empidonax flaviventris*. YELLOW-BELLIED FLYCATCHER.—Three were seen in rather open forest nearly opposite the Half-way House in July, 1884. (Altitude, about 3800 feet.)

15. *Cyanocitta cristata*. BLUE JAY.—On July 26, 1884, a small flock was seen opposite the Half-way House (altitude, 3800 feet), and on July 11-12 others were seen farther down the Mountain. It probably breeds from the base to the timber line, but is far from plenty everywhere. None were seen in 1886.

16. *Perisoreus canadensis*. CANADA JAY.—Much more common than the Blue Jay, though nowhere plenty. Small flocks of half a dozen were seen on three or four occasions, but usually there was only one or at most two. We found them early in July from near the base of the mountain to the limit of the spruce and fir forest, a little above the Half-way House (altitude, 3850 feet). A short distance below it, at the limit of good sized spruce and fir trees, they were more plenty than anywhere else.

17. *Corvus americanus*. AMERICAN CROW.—Not seen in 1884, except about the base, where it was common. Two were seen at an altitude of 2650 feet, on July 7, 1886, near which it is not improbable that they breed; but two others seen on the bare rocks at an altitude of 5350 feet had evidently flown up from below.

18. *Pinicola enucleator*. PINE GROSBEAK.—Two specimens seen, both of them in the low spruce and fir timber opposite the Half-way House (altitude, 3800 feet). One was a fine adult male in full song, seen July 12, 1884; the other an immature bird, seen July 13, 1886.

19. *Carpodacus purpureus*. PURPLE FINCH.—Extremely abundant at the base of the mountain, and found in all but the thickest woods as high as the timber line.

20. *Loxia curvirostra minor*. AMERICAN CROSSBILL.—Not common, though small flocks were occasionally seen in 1886 near the timber line. I am told that in the country below (no one knows about the mountain itself) they are often entirely absent in summer, and in 1884 we failed to find them. They probably range through the whole of this region, however, though less abundant during the past summer than in some seasons.

21. *Spinus tristis*.—AMERICAN GOLDFINCH.—One was seen by J. L. Goodale on July 8, 1886. It was on the West Branch of the Peabody River at an altitude of about 3050 feet.

22. *Spinus pinus*. PINE SISKIN.—A few were heard in the woods near the Half-way House on July 12, and again on July 26, 1884; and one was seen in August of the same year near Hermit Lake (altitude, 4100 feet). Not found in 1886.

23. *Zonotrichia albicollis*. WHITE-THROATED SPARROW.—Extremely abundant at the base of the mountain, and very common at all altitudes up to the limit of shrubs, and on quiet days one was occasionally heard on the bare rocks above. The highest point at which it was noted was 5300 feet.

24. *Junco hyemalis*. SLATE-COLORED JUNCO.—Very common from the base to the bare rocky summits of the highest peaks. It occurs not only on the summit of Mt. Washington, where it can find plenty of food about the stables, but on the tops of Mt. Adams, Mt. Jefferson, and other peaks, where there are only bare lichen-covered boulders without even the hardy alpine plants found but a short distance below. In such places the Junco must breed, for early in July old birds were feeding newly fledged young with insects, of which they seemed to find large numbers. Two females shot on July 12 had ovaries nearly ready for a second clutch of eggs, and one was seen with its bill full of horse-hair.

25. *Melospiza fasciata*. SONG SPARROW.—Found a single specimen of this bird on the bare rocks at an altitude of 5340 feet on Mt. Washington. As this was early in the season (July 6, 1886), and there had been no storm for two weeks to carry it from its usual habitat to such a height, it may have nested somewhere near. It is abundant throughout the country at the base, but the above was the only one seen on the mountain itself.

26. *Ampelis cedrorum*. CEDAR WAX-WING.—Several flew over us near the fifth mile post of the carriage road on July 11, 1884. Others were heard opposite the Half-way House on July 26. Not seen in 1886.

27. *Vireo olivaceus*. RED-EYED VIREO.—Heard for the first mile or two of the carriage road, but was not common. A Vireo heard about a mile below Hermit Lake may have been *V. philadelphicus*, but I could not get near enough to shoot it.

28. *Helminthophila ruficapilla*. NASHVILLE WARBLER.—On July 11, 1884, one was heard singing on the third mile by carriage road from the base, and another was seen on the bare mountain side on the fifth mile. Not positively identified in 1886.

29. *Helminthophila peregrina*. TENNESSEE WARBLER.—One found on Mt. Adams, at an altitude of 4000 feet, on Sept. 2, 1884.

30. *Dendroica cærulescens*. BLACK-THROATED BLUE WARBLER.—Not uncommon at the base, and as high as the second mile post of the carriage road. Was not found above this.

31. *Dendroica coronata*. YELLOW-RUMPED WARBLER.—Is common through the country at the base of the mountain, and specimens were seen at an altitude of 4240 feet in Tuckerman's Ravine on July 6, 1886.

It seems about equally plenty from the base to the tree limit, but the few found on the low matted spruces higher up may have been only stragglers in search of food.

32. *Dendroica castanea*. BAY-BREASTED WARBLER.—One was killed at our camp in the Great Gulf early in July, 1886, and two broods of young just out of the nest were found about two miles by carriage road from the base.

33. *Dendroica striata*. BLACK-POLL WARBLER.—Common about our camp in the Great Gulf (altitude, 3140 feet), but did not occur far below it. From the altitude of our camp as far as the shrubs extended it outnumbered the common Junco. It was very abundant through the shrubs and low matted spruces above the timber limit, but owing to lack of proper shelter did not extend higher. I saw a single specimen, at an altitude of 4800 feet, in some stunted birches (*Betula papyracea minor*) and dwarf willows (*Salix cutleri*).

Young birds were heard on July 10 apparently just out of the nest, but some young killed on July 26 had already begun to change into fall plumage. The males were in full song on July 26, but on August 11 both old and young birds had disappeared.

34. *Dendroica blackburniæ*. BLACKBURNIAN WARBLER.—Occurs at the base of the mountain; one was heard on July 11, above the second mile post of the carriage road, and another seen at 3800 feet altitude on July 8, 1886.

35. *Dendroica virens*. BLACK-THROATED GREEN WARBLER.—Common about the base, but soon becomes rare, and was not seen above 2590 feet.

[36. *Geothlypis agilis*, or *G. philadelphia*. On July 7, 1886, I saw a bird in a damp thicket, by the side of the carriage road, at an elevation of 2640 feet, that was undoubtedly either a Connecticut or a Mourning Warbler. In its slow, listless motions and peculiar way of flirting its tail, it reminded me most of the former as seen in Massachusetts in autumn, but the latter would seem to be far more likely to occur.]

37. *Sylvania canadensis*. CANADIAN WARBLER.—One was seen on the second mile, by carriage road, from the base of the mountain, on July 26, 1884.

38. *Troglodytes hiemalis*. WINTER WREN.—Common from base to timber limit, wherever it can find suitable damp mossy woods. The highest point at which it was seen was on the brook which runs from the Snow Arch in Tuckerman's Ravine. Altitude, 4100 feet.

39. *Certhia familiaris americana*. BROWN CREEPER.—Not common

anywhere. The lowest point at which it was seen on the mountain was 3140 feet, and the highest near the tree limit in Tuckerman's Ravine, at an elevation of 4100 feet.

40. *Sitta canadensis*. RED-BREASTED NUTHATCH.—Common at the base of the mountain, but more plenty at a higher altitude, and most abundant in the low spruce and fir forest near the limit of timber. Young birds in first plumage were killed on July 12, opposite the Half-way House. On September 2, 1884, I saw one running over the bare rocks on the summit of Mt. Clay.

41. *Parus atricapillus*. CHICKADEE.—Extends from the base to the limit of timber. None were seen in the dwarf spruces or low matted growth, and above 3000 feet it was less plenty than *P. hudsonicus*. The latter seems to replace it almost entirely in Tuckerman's Ravine above 4100 feet, and also around the Half-way House (3800 feet).

42. *Parus hudsonicus*. HUDSONIAN CHICKADEE.—The lowest point at which this bird was seen was a short distance below our camp in the Great Gulf (altitude, 3050 feet). It was rare there, however, and during our two weeks' stay we saw only five. About the Half-way House in Tuckerman's Ravine, and on the path from there to the carriage road, it was comparatively plenty, as low as 3300 feet, though nowhere an abundant bird. On September 2, 1884, a small flock was seen in the 'saddle' between Mt. Jefferson and Mt. Adams, though the dwarf spruces were not over two feet high.

43. *Regulus satrapa*. GOLDEN-CROWNED KINGLET.—Common from base to tree limit. None seen above the timber line, and everywhere equally plenty.

44. *Turdus aliciae bicknelli*. BICKNELL'S THRUSH.—Found from an altitude of 3000 feet to the limit of stunted spruces about four feet high, 4340 feet in Tuckerman's Ravine being the highest point at which it was noted. In the neighborhood of our camp in the Great Gulf (3140 feet) it was less plenty than *T. ustulatus swainsonii*, though not to any great extent; but at 4100 feet in Tuckerman's Ravine it outnumbered it nearly three to one. Bicknell's Thrush was most abundant, however, in the woods opposite the Half-way House and for about half a mile below it. A young bird in full first plumage was taken on July 12, 1884.

45. *Turdus ustulatus swainsonii*. OLIVE-BACKED THRUSH. Occurs throughout the country at the base of the mountain, but is there outnumbered by *T. aonalaschkae pallasii*; the latter soon becomes rare as a higher altitude is reached, but its place is then taken by *T. aliciae bicknelli*; there is, however, an intermediate tract where *T. u. swainsonii* is the most abundant of the Thrushes. In short, Swainson's is the only Thrush that extends uninterruptedly from base to shrub limit, though in the highest part of its range it is less plenty than Bicknell's, and near the base not as common as the Hermit. In the intervale land along the river, *T. a. pallasii* takes the place held by *T. u. swainsonii*, and is there outnumbered by *T. fuscescens*. So that there are in all four distinct areas of distribution:

1. The intervale woods and thickets along the Androscoggin River, where *T. fuscescens* is abundant, *T. u. pallasii* less so.

2. From the low intervale lands nearly to the second mile of the carriage road *T. a. pallasii* outnumbered *T. u. swainsonii*.

3. From the last point to 3000 feet altitude *T. u. swainsonii* was the only one seen in any numbers.

4. From 3500 feet to the limit of stunted firs and spruces, *T. a. bicknelli* is the most abundant.

46. *Turdus aonalaschkæ pallasii*. HERMIT THRUSH.—Saw nothing of the bird except on the way up the mountain by the carriage road. It was common as far as the second mile post, but none were seen beyond with the exception of a single specimen seen at an elevation of 3300 feet.

47. *Merula migratoria*. AMERICAN ROBIN.—On July 12, 1886, a pair were seen at an altitude of 5080 feet on the Crawford Bridle Path. They may have been stragglers from the valley below, but as it was not during the migration, and there had been no storm for several weeks, it seems more likely that they had nested in some stunted firs and spruces on a southern slope near by. No others were seen.

THE BIRDS OF THE WEST INDIES, INCLUDING
THE BAHAMA ISLANDS, THE GREATER AND
THE LESSER ANTILLES, EXCEPTING
THE ISLANDS OF TOBAGO
AND TRINIDAD.

BY CHARLES B. CORY.

[Continued from p. 51.]

FAMILY COLUMBIDAE.

GENUS *Columba* LINN.

Columba LINNÆUS, Syst. Nat. 1735, and Syst. Nat. ed. 10, p. 162 (1758).

✓ *Columba leucocephala* LINN.

Columba leucocephala LINN. Syst. Nat. I, p. 164 (1758).—NUTT. Man. Orn. I, p. 625 (1832).—GOSSE, Bds. Jam. p. 299 (1847).—SALLÉ, P. Z. S. 1857, p. 235.—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 301.—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 96 (1866).—SUNDEV. Oefv. K. Vet. Akad. För. 1869, pp. 585, 600.—SCL. & SALV. Nom. Avium Neotr. p. 132 (1873).—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 363 (1874).—LAWR. Pr. U. S. Nat. Mus. I, p. 487 (1878).

—CORY. Bds. Bahama I. p. 137 (1880).—A. & E. NEWTON. Handb. Jamaica, p. 114 (1881).—CORY, Bull. Nutt. Orn. Club, VI, p. 154 (1881); *ib.* Bds. Haiti & San Domingo, p. 134 (1885); *ib.* List Bds. W. I. p. 23 (1885).—COUES, Key N. Am. Bds. p. 565 (1884).

Patagianas leucocephalus REICHL. Syst. Av. (1851).—BP. Consp. II, p. 54 (1854).—A. & E. NEWTON, *Ibis*, 1859, p. 253.

Patagianas leucocephala REICHL. Syst. Nat. p. 25 (1851).—BP. Consp. II, p. 54 (1854).—CAB. J. f. O. 1856, p. 107.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—SCL. P. Z. S. 1861, p. 80.—ALBRECHT. J. f. O. 1862, p. 204.—*ib.* GUNDL. 1874, p. 288; *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 345 (1878).

SP. CHAR. *Male*.—Above grayish blue, showing slight reflections; crown pure white, bordered at the nape by a band of dark purple, and below it a cape extending upon each side of the neck of metallic green, showing blue in some lights, the feathers bordered with black; quills dark brown, becoming lighter upon the secondaries; underparts grayish blue; crissum plumbeous; tail very dark brown.

The female resembles the male, but is somewhat paler.

Length, 12.50; wing, 7.25; tail, 2.25; tarsus, .80.

HABITAT. Bahamas and Antilles.

✓ *Columba corensis* GMEL.

Columba corensis GMEL. Syst. Nat. I, p. 783 (1788).—SALLÉ, P. Z. S. 1857, p. 235.—A. & E. NEWTON, *Ibis*, 1859, p. 252.—CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 377.—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 96 (1866).—SUNDEV. Oefv. K. Vet. Akad. För. 1869, p. 601.—SCL. & SALV. Nom. Avium Neotr. p. 132 (1873).—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 360 (1874).—LAWR. Pr. U. S. Nat. Mus. I, p. 487 (1878).—LISTER, *Ibis*, 1880, p. 42.—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880).—CORY, Bds. Haiti & San Domingo, p. 136 (1885); *ib.* List Bds. W. I. p. 23 (1885).—WELLS, List Bds. Grenada, p. 6 (1886).

Columba portoricensis TEMM. Hist. Gen. Pigeons, I, pl. 15 (1813).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 172 (1840).

Columba monticolor VIEILL. Nouv. Dict. XXVI, p. 355 (1818).

Columba imbricata WAGL. Syst. Nat. No. 48 (1827).

Patagianas corensis BP. Consp. II, p. 54 (1854).—CAB. J. f. O. 1856, p. 108.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 299 (1866); *ib.* J. f. O. 1874, p. 289; *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 344 (1878).

SP. CHAR. *Male*.—General plumage slaty; top of head, throat and breast pale purple; a broad cape extending from the sides of the neck, over the upper back, of beautifully rounded feathers, showing bright, metallic purple when held in the light, each feather narrowly edged with dark brown at the base of the skull.

The sexes are similar, the female being slightly paler.

Length. 13.50; wing. 7.50; tail. 5.50; tarsus, 1.

HABITAT. Antilles.

Columba caribæa LINN.

Columba caribæa LINN. Syst. Nat. I (1766).—GMEL. Syst. Nat. I, p. 773 (1788).—LATH. Ind. Orn. p. 603 (1790).—TEMM. Hist. Gen. Pigeons, 450 (1813-15).—SHAW, Gen. Zool. XI, p. 37 (1819).—SUNDEV. Oefv. K. Vet. Akad. För. 1869, p. 601.—SCL. & SALV. Nom. Avium Neotr. p. 132 (1873).—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 359 (1874).—A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, List Bds. W. I. p. 23 (1885).

Columba caribbæa DENNY. P. Z. S. 1847, p. 39.

Columba caribbæa GOSSE. Bds. Jam. p. 291 (1847).

Patagiænas caribæa BP. Consp. II. p. 54 (1854).—SCL. P. Z. S. 1861, p. 80.

—ALBRECHT, J. f. O. 1862, p. 204.—REICH. Handb. p. 65, tab. 230.—

GRAY, Handl. Bds. II, p. 234 (1870).

Columba caribæa MARCH. Pr. Acad. Nat. Sci. Phila. 1863, p. 301.

SP. CHAR. *Male*:—Forehead and cheeks showing a faint olive, the rest of the head a dull purplish tinge; chin dull white; feathers of the nape and upper back showing golden green reflections when held in the light; rest of upper parts dull olive; breast showing a dull purplish tinge; rest of underparts pale reddish brown; upper surface of tail dark slaty brown, almost black, to within two inches of the tip, which is very pale brown; upper tail-coverts nearly covering the dark brown of the basal portion; under surface of tail dull white; primaries dark brown, narrowly edged with white on the outer webs, showing brightest on the second, third, and fourth feathers.

The sexes are similar.

Length (skin), 14; wing, 8.50; tail, 6; tarsus, .90.

HABITAT. Jamaica and Porto Rico.

Columba inornata VIG.

Columba inornata VIG. Zool. Journ. 1827, p. 446.—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 173 (1840).—DENNY, P. Z. S. 1847, p. 39.—SCL. P. Z. S. 1861, p. 80.—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 301.—SCL. & SALV. Nom. Avium Neotr. p. 132 (1873).—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 360 (1874).—A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, Bds. Haiti & San Domingo, p. 136 (1885); *ib.* List Bds. W. I. p. 23 (1885).

Columba rufina GOSSE, Bds. Jam. p. 296 (1847).

Chlorænas inornata BP. Consp. II, p. 53 (1854).—CAB. J. f. O. 1856, p.

106.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—

SCLATER, P. Z. S. 1861, p. 80.—ALBRECHT, J. f. O. 1862, p. 204.—

GUNDL. Repert. Fisico-Nat. Cuba, I, p. 298 (1866); *ib.* J. f. O. 1874. pp. 286, 312; *ib.* Anal. Soc. Esp. Hist. Nat. VII. p. 343 (1878).

SP. CHAR. *Male*:—Head, neck, underparts, and some of the wing-coverts dull purple; rest of plumage slaty; edges of outer webs of some of the wing-coverts white, distinctly marking the wings; chin dull white.

The sexes are similar.

Length, 14.50; wing, 8.50; tail, 5.50; tarsus, 1.10.

HABITAT. Greater Antilles.

GENUS *Engyptila* SUNDEV.

Engyptila SUNDEVALL, Stockholm Acad. Handl. 1835.

Engyptila jamaicensis (LINN.).

Columba jamaicensis LINN. Syst. Nat. I, p. 283 (1766).—GMEL. Syst. Nat. I, p. 782 (1788).—TEMM. Hist. Gen. Pigeons, p. 495 (1813-15).

Columba frontalis TEMM. Hist. Gen. Pigeons (1813-15).

Goura jamaicensis SHAW, Gen. Zool. XI, p. 126 (1819).

Peristera jamaicensis GOSSE, Bds. Jan. p. 313 (1847).—ALBRECHT, J. f. O. 1862, p. 204.

Leptoptila jamaicensis SLOANE, Jam. pl. 262.—BP. Icon. Pig. t. 119; *ib.* Consp. II, p. 73 (1864).—MARCH. Pr. Acad. Nat. Sci. Phila. 1863, p. 302.—GRAY, Handl. Bds. II, p. 242 (1870).—SCL. & SALV. Nom. Avium Neotr. p. 133 (1873).

Engyptila jamaicensis A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, List Bds. W. I. p. 23 (1885).

SP. CHAR. *Male*:—Forehead dull white, shading into slaty gray on the top of the head; a cape of metallic purple, blue and gray, when held in the light; rest of upper surface olive; throat dull white, becoming slaty on the underparts; flanks and belly dull white; under surface of wings bright rufous; tail feathers slaty, tipped with white, except the two central ones, which are pale brown; primaries pale brown.

Length (skin), 10; wing, 6; tail, 4.25; tarsus, 1; bill .75.

HABITAT. Jamaica.

Engyptila wellsii LAWR.

Engyptila wellsii LAWR. Auk. I. No 2, p. 180 (1884).—CORY, List Bds. W. I. p. 23 (1885); *ib.* Revised List (1886).—WELLS, List Bds. Grenada, p. 7 (1886).

SP. CHAR. *Female*:—The front is whitish, with a slight tinge of fawn color on the anterior portion, and is of a bluish cast on the posterior;

the crown and occiput are dark brown; the hind neck is of a rather lighter brown: the back, wings, and upper tail-coverts are of a dull olivaceous green: the first outer tail-feather is brownish-black, narrowly tipped with white; the second is dark brown for two-thirds its length, terminating in blackish; all the other tail-feathers are dark amber brown above, and black underneath; the chin is white; the neck in front and the upper part of the breast are of a reddish fawn color; the middle and lower parts of the breast and the abdomen are creamy white: the sides are of a light fulvous color; the under tail-coverts are white, tinged with fulvous; the quills have their outer webs of a clear warm brown; the inner webs and under wing-coverts are of a rather light cinnamon color; the bill is black; the tarsi and toes are bright carmine red.

"Mr. Wells says the sexes are alike.

"Length, 12.25 inches; wing, 6.00; tail, 4.00; bill, .63; tarsus, 1.25." (LAWR., l. c., orig. descr.)

HABITAT. Grenada.

Engyptila collaris CORY.

Engyptila collaris CORY, Auk, III, pp. 498, 502 (1886).

SP. CHAR.—Forehead dull white; top of the head dark gray, showing a metallic tinge of purple on the nape; a cape of metallic purple showing greenish red reflections where it joins the back; back dark brownish olive; throat dull white; breast dull vinaceous, shading into dull white on the belly; sides dull red brown; under wing-coverts and under surface of wing rufous brown; primaries brown, having the inner webs heavily marked with rufous brown; tail slaty brown, two or three outer feathers tipped with white; feet red; bill black; iris dull white.

Length, 9.50; wing, 5.75; tail, 3.50; tarsus, 1.25; bill, .75.

HABITAT. Grand Cayman.

GENUS *Zenaidura* BONAP.

Zenaidura "BONAPARTE, CONSP. II, 1854, p. 84."

Zenaidura macroura (LINN.).

Columba macroura LINN. S. N. ed. 10, p. 164 (1758), part.

Columba carolinensis LINN. Syst. Nat. I, p. 286 (1766).—D'ORB. in La Sagra's Hist. Nat. Cuba. Ois. p. 176 (1840).—SUNDEV. Oefv. K. Vet. Akad. För. 1869, p. 601 (Porto Rico).

Zenaidura carolinensis SALLÉ, P. Z. S. 1857, p. 235 (San Domingo).—CORY, Bull. Nutt. Orn. Club, VI, p. 154 (1881) (Haiti); *ib.* Bds. Haiti & San Domingo, p. 129 (1885); *ib.* List Bds. W. I. p. 23 (1885).

Perissura carolinensis BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860)

- (Cuba).—GUNDL. Repert. Fisico-Nat. Cuba. I, p. 301 (1865); *ib.* J. f. O. 1874, p. 298 (Cuba).
Columba (Zenadura) carolinensis BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 96 (1867) (San Domingo).

Recorded from Haiti, San Domingo, Cuba, and Porto Rico.

GENUS *Ectopistes* SWAINS.

Ectopistes SWAINSON, Zool. Jour. III, p. 362, 1827.

Ectopistes migratorius (LINN.).

- Columba migratoria* LINN. Syst. Nat. I, p. 285 (1766).
Ectopistes migratoria SWAINS. Zool. Journ. III, p. 362 (1827).—GUNDL. J. f. O. 1856, p. 112 (Cuba); *ib.* Repert. Fisico-Nat. Cuba, I, p. 302 (1865); *ib.* J. f. O. 1874, p. 300 (Cuba).—CORY, List Bds. W. I. p. 24 (1885).

Accidental in Cuba.

GENUS *Zenaida* BONAP.

Zenaida BONAPARTE, Geog. and Comp. List. p. 41, 1838.

Zenaida zenaida (BONAP.).

- Columba zenaida* BP. Journ. Acad. Nat. Sci. Phila. V, p. 30 (1825).—WAGL. Isis, 1829, p. 744.—D'ORB. in La Sagra's Hist. Nat. Cuba. Ois. p. 177 (1840).—AUD. Bds. Am. V, p. 1 (1842).—BRYANT, Pr. Bost. Soc. Nat. Hist. X, p. 257 (1866).
Zenaida amabilis BP. List, 1838; *ib.* Consp. II, p. 82 (1854).—GOSSE. Bds. Jam. p. 307 (1847).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 120 (1859).—A. & E. NEWTON, Ibis, 1859, p. 253.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 120 (1859).—A. & E. NEWTON, Ibis, 1859, p. 253.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 378.—SCL. P. Z. S. 1861, p. 80.—ALBRECHT, J. f. O. 1862, p. 204.—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 302.—GUNDL. Repert. Fisico-Nat. Cuba. I, p. 301 (1865); *ib.* J. f. O. 1874, pp. 298, 312; *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 346 (1878).—SCL. & SALV. Nom. Avium Neotr. p. 132 (1873).—A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, Bds. Bahama I. p. 138 (1880); *ib.* Bds. Haiti & San Domingo, p. 128 (1885); *ib.* List Bds. W. I. p. 24 (1885).—COUES, Key N. Am. Bds. p. 569 (1884).

SP. CHAR. *Male*:—Above olive brown; top of the head and underparts pale purplish brown; sides of the body and under wing-coverts bluish; tail-feathers, with the exception of the central ones, bluish,

with a black band about an inch from the tip; a slight streak of metallic blue below the ear; quills dark brown; secondaries tipped with white; feet red.

The sexes are similar.

Length, 10; wing, 6; tail, 4.30; tarsus, 80; bill, .55.

HABITAT. Antilles.

Zenaida spadicea CORY.

Zenaida spadicea CORY, Auk, III, pp. 498, 502 (1886).

SP. CHAR.—General upper plumage dark olive brown, rufous brown on the forehead and showing a tinge of very dull purple on the crown, apparently wanting in some specimens; a sub-auricular spot of dark metallic blue; sides of the neck and nape rich metallic purple; chin pale buff, shading into rich rufous chestnut on the throat and breast; belly brown, showing a slight vinaceous tinge; upper surface of tail brown, the feathers showing a sub-terminal band of black, and all the feathers except the central ones tipped with gray; primaries dark brown, almost black, faintly tipped with dull white; the secondaries broadly tipped with white; under wing-coverts gray; bill black; feet red.

Length, 9.60; wing, 6; tail, 3.75; tarsus, .75; bill, .50.

HABITAT. Grand Cayman.

A specimen of *Zenaida* taken in Little Cayman differs somewhat from *Z. spadicea*, being lighter colored and having the metallic feathers of the neck somewhat differently colored—paler and less in extent. I have separated the Little Cayman bird provisionally and with much hesitation, and have proposed the name *Zenaida richardsoni* for it (see Auk, IV, p. 7, 1887), should further investigation prove them specifically separable.

Zenaida martinicana BONAP.

Zenaida martinicana, BP. Consp. II, p. 82 (1854).—TAYLOR, Ibis, 1864, p. 171.—GRAY, Handl. Bds. II, p. 241 (1870).—SCL. & SALV. Nom. Avium Neotr. p. 132 (1873).—LAWR. Pr. U. S. Nat. Mus. I, p. 487 (1878).—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880).—LISTER, Ibis, 1880, p. 43.—GRISDALE, Ibis, 1882, p. 492.—CORY, List Bds. W. I. p. 24 (1885).—WELLS, List Bds. Grenada, p. 7 (1886).

Columba (Zenaida) martinicana SUNDEV. Oefv. K. Vet. Akad. För. 1869, p. 585.

SP. CHAR.—Top of head, cheeks, and upper throat pale rufous brown; narrow line of dark blue on the cheek; chin dull white; feathers of

the sides of the neck tipped with metallic purple; throat tinged with pale lavender; underparts dull bluish white; back olive brown, shading into chestnut brown on the rump; central tail-feathers brown; rest of tail-feathers slate color at the base, succeeded by a band of black, and tipped with white; quills dark brown, showing an indistinct white edging on the outer primaries, tipped with white; bill black.

Length, 10; wing, 6; tail, 4; tarsus, .75; bill, .50.

HABITAT. Lesser Antilles.

Zenaida rubripes LAWR.

Zenaida rubripes LAWR. Auk, II, p. 357 (1885).—CORY, Revised List Bds. W. I. p. 24 (1886).—WELLS, List Bds. Grenada, p. 7 (1886).

SP. CHAR. *Female*:—"The front is of a light brown tinged with vinaceous; the upper plumage is olivaceous-brown, with a dull reddish tinge, which is most observable on the back; the hind part and sides of the neck are grayish, the latter glossed with golden changing to light violet; the two central tail-feathers are olive brown; the outer web of the first lateral feather is pale rufous; the bases of the four outer ones are brownish-cinereous, with their ends largely pale rufous, the two colors separated by a black bar; the other tail-feathers are dark cinereous with a subterminal black bar, on the under side the color of the basal portion of the tail-feathers is blackish cinereous; the primaries are dark umber-brown, the secondaries brownish-black, both narrowly edged with white; the tertials are the color of the back, and are marked with four conspicuous oval spots of black; the under wing-coverts are light bluish-ash, the flanks dark ashy-blue; behind the eye is a small spot of black, and another below the ears; sides of the head and the chin pale vinaceous, the latter lighter in color; the under plumage is of a reddish cinnamon color, rather dull on the throat and breast, but somewhat brighter on the abdomen and under tail-coverts; bill black; tarsi and toes carmine red.

"The color of the feet in the dried specimen is quite bright; in the living bird it is doubtless much more so. The tail has fourteen rectrices.

"Length, fresh, 9.50 inches; wing, 5.25; tail, 3.38; bill, .62; tarsus, .75." (LAWR., l. c., orig. descr.)

HABITAT. Grenada.

GENUS *Melopelia* BONAP.

Melopelia BONAPARTE, Consp. II, p. 81, 1854.

Melopelia leucoptera (LINN.).

Columba leucoptera LINN. Syst. Nat. I, p. 164 (1758).

Turtur leucoptera GOSSE, Bds. Jam. p. 304 (1847).

- Zenaidra leucoptera* SCL. P. Z. S. 1861 p. 80, (Jamaica).—ALBRECHT, J. f. O. 1862, p. 204 (Jamaica).
Melopelia leucoptera MARCII, Pr. Acad. Nat. Sci. Phila. 1863, p. 302 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 301 (1866); *ib.* J. f. O. 1874, p. 297 (Cuba).—A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, Bds. Haiti & San Domingo, p. 131 (1885); *ib.* List Bds. W. I. p. 24 (1885).

This species has been recorded from Cuba, Jamaica, and San Domingo.

GENUS *Columbigallina* BOIE.

Columbigallina BOIE, Isis, 1826, p. 977.

✓*Columbigallina passerina* (LINN.).

- Columba passerina* LINN. Syst. Nat. I, p. 285 (1766).—GMEL. Syst. Nat. I, p. 787 (1788).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 179 (1840).—SUNDEV. Oefv. K. Vet. Akad. För. 1869, pp. 586, 601.
Columbigallina passerina ZELEDON, Pr. U. S. Nat. Mus. VIII, p. 112 (1885).—CORY, Ibis, 1886, pp. 472, 474; *ib.* Auk, III, p. 502 (1886).
 “*Columba (Goura) passerina* BP. Obs. Wils. 1825, No. 181.—NUTT. Man. I, p. 635 (1832).”
 “*Chamæpelia passerina* SWAINS. Zool. Journ. III, p. 358 (1827).”
Chamæpelia passerina BP. List, 1838, p. 41.—GOSSE, Bds. Jam. p. 311 (1847).—SALLÉ. P. Z. S. 1857, p. 236.—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 120 (1859); *ib.* XI, p. 96 (1866).—WELLS, List Bds. Grenada, p. 7 (1886).—BREWER, *ib.* VII, p. 307 (1860).—SCL. P. Z. S. 1861, p. 80; *ib.* 1874, p. 175.—ALBRECHT, J. f. O. 1862, p. 204.—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 302.—SCL. & SALV. Nom. Avium Neotr. p. 133 (1873).—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 389 (1874).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 349 (1878).—LAWR. Pr. U. S. Nat. Mus. I, p. 487 (1878).—LISTER, Ibis, 1880, p. 43.—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, Bds. Bahama I. p. 139 (1880); *ib.* Bull. Nutt. Orn. Club, VI, p. 154 (1881); *ib.* Bds. Haiti & San Domingo, p. 127 (1885); *ib.* List Bds. W. I. p. 24 (1885).—COUES, Key N. Am. Bds. p. 569 (1884).—RIDGW. Pr. U. S. Nat. Mus. VII, p. 172 (1884).
Chamæpelia trochila A. & E. NEWTON, Ibis, 1859, p. 253.—CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 378.—SCL. P. Z. S. 1872, p. 653.
Columba (Chamæpelia) passerina BRYANT, Pr. Bost. Soc. Nat. Hist. X, p. 257 (1866).
Chamæpelia bahamensis MAYNARD, Am. Exch. & Mart, Jan. 15, 1887.

SP. CHAR. *Male*.—Above grayish olive, showing a bluish tinge upon the nape and crown; underparts reddish purple, becoming ashy on the

sides; under wing-coverts and quills showing reddish brown, the latter margined and tipped with dark brown; middle tail-feathers like the back, the others dark brown, two outer feathers tipped with white; upper surface of wing showing large spots of bluish purple; bill and feet yellowish, the former becoming dark at the tip.

The sexes are similar.

Length, 6.30; wing, 3.30; tail, 2.60; tarsus, .50; bill, .50.

HABITAT. Bahamas and Antilles.

GENUS *Geotrygon* GOSSE.

Geotrygon GOSSE, Bds. Jam. p. 316, 1847.

Geotrygon cristata (TEMME.).

Columba cristata TEMME. Hist. Gen. Pigeons, p. 449 (1813-15).—SHAW, Gen. Zool. XI, p. 40 (1819).

Geotrygon sylvatica GOSSE, Bds. Jam. p. 316 (1847).—ALBRECHT, J. f. O. 1862, p. 204.

Geotrygon cristata BP. Consp. II, p. 70 (1854).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 300.—GRAY, Handl. Bds. II, p. 243 (1870).—SCL. & SALV. Nom. Avium Neotr. p. 134 (1873).—A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, List Bds. W. I. p. 24 (1885).

SP. CHAR. *Male*:—Forehead black, shading into grayish olive on the top of the head; a malar stripe of pale rufous; breast, sides of the neck, and upper back forming a broad collar of beautiful metallic purple; held in the light it shows bright golden green; back and wing-coverts dark purple, tinged with blue, showing chestnut in some lights; rump dark green; under surface of wings rufous brown; belly slate color; sides and flanks rufous brown; the first six primaries bright rufous, shading into green on the tips and inner webs; secondaries green; upper surface of tail green.

Length (skin), 11; wing, 6.75; tail, 4; tarsus, 1.05; bill, .90.

HABITAT. Jamaica.

Geotrygon mystacea (TEMME.).

Columba mystacea TEMME. Hist. Gen. Pigeons, p. 473 (1814-15).—SHAW, Gen. Zool. XI, p. 56 (1819).—"REICHL. Syst. Av. t. 257, b. f. 3382."

Geotrygon mystacea BP. Consp. II, p. 71 (1854).—GRAY, Handl. Bds. II, p. 243 (1870).—SCL. & SALV. Nom. Avium Neotr. p. 134 (1873).—LAWR. Pr. U. S. Nat. Mus. I, p. 487 (1878).—SCL. P. Z. S. 1879, p. 765.—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880).—CORY, List Bds. W. I. p. 24 (1885); *ib.* Ibis, 1886, p. 475.

SP. CHAR.—Forehead brownish, shading into green on the top of the head; sides of the neck and upper back bright metallic green, becoming bright purple with bluish reflections on reaching the back; stripe of white on the cheeks, passing from the lower mandible; rest of upper parts dark olive green; upper portion of throat dull white; becoming brown with greenish reflections on the breast; underparts dull purplish white, becoming dull white on the belly; under tail-coverts chestnut brown, tipped with white; primaries deep rufous chestnut, olive at tips; tail-feathers, except the two central ones, chestnut, shading to dull olive at the tip.

Length, 11; wing, 6.50; tail, 5; tarsus, 1.25; bill, .70.

HABITAT. Guadeloupe, Santa Lucia, and Grand Terre.

✓ *Geotrygon caniceps* GUNDL.

Columba caniceps GUNDL. Journ. Bost. Soc. Nat. Hist. VI, p. 315 (1852).

Geotrygon caniceps GUNDL. J. f. O. 1856, p. 110.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 300 (1866); *ib.* J. f. O. 1874, p. 295.—SCL. & SALV. Nom. Avium Neotr. p. 134 (1873).—CORY, List Bds. W. I. p. 24 (1885).

SP. CHAR. *Male*.—Forehead whitish, shading into slate color on the top of the head; the feathers of the nape showing greenish and purple reflections when held in the light; back purple; rump steel blue, showing greenish reflections in the light; throat pale, becoming slaty on the breast, with slight reflections in the light; underparts pale slate color, showing rufous on the abdomen, and deep rufous brown on the crissum; under surface of wing reddish brown; primaries olive brown, showing rufous brown on the inner webs.

The sexes are similar.

Length (skin), 10.50; wing, 6; tail, 3.50; tarsus, 1.20.

HABITAT. Cuba.

✓ *Geotrygon montana* (LINN.).

Columba montana LINN. Syst. Nat. I, p. 281 (1766).—GMEL. Syst. Nat. I, p. 772 (1788).—SUNDEV. Oefv. K. Vet. Akad. För. 1869, p. 601.

Peristera montana GRAY. Gen. Bds. II, p. 475 (1844-49).

Geotrygon montana GOSSE, Bds. Jam. p. 320 (1847).—BP. Consp. II, p. 72 (1854).—CAB. J. f. O. 1856, p. 109.—SALLÉ. P. Z. S. 1857, p. 235.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—SCL. P. Z. S. 1861, p. 80.—ALBRECHT, J. f. O. 1862, p. 204.—MARCH. Pr. Acad. Nat. Sci. Phila. 1863, p. 300.—TAYLOR, Ibis, 1864, p. 171.—GUNDL. J. f. O. 1874, p. 294; *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 348 (1878).—LAWR. Pr. U. S. Nat. Mus. I, p. 487 (1878).—LISTER, Ibis, 1880, p. 43.—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, Bds. Haiti & San

Domingo, p. 132 (1885); *ib.* List Bds. W. I. p. 24 (1885); *ib.* Ibis, 1886, p. 473.—WELLS, List Bds. Grenada, p. 7 (1886).

Columba (Geotrygon) montana BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 96 (1866); *ib.* X, p. 257 (1866).

SP. CHAR. *Male*:—Above purplish brown, becoming light brown on the wings; throat dull white, becoming pale purple on the breast; belly pale brown, becoming brownish white on the under tail-coverts.

Female:—Upper parts greenish brown; forehead light brown, the color extending upon the cheeks and sides of the head; breast chestnut brown.

Length, 9.25; wing, 6; tail, 3.25; tarsus, 1.

HABITAT. Antilles.

✓ *Geotrygon martinica* (GMEL.).

Columba martinica GMEL. Syst. Nat. I, p. 781 (1788).

Columba montana AUD. Orn. Biog. II, p. 382 (1834).—NUTT. Man. I, 2nd ed. p. 756 (1840) (not of LINN.).

Zenaida montana BP. Geog. & Comp. List. 1838.

Orcopelia martinicana REICH. Syst. Nat. Av. p. 25 (1851).

Geotrygon martinica BP. Consp. II, p. 74 (1854).—CAB. J. f. O. 1856, p. 108.—BREWER. Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—SCL. & SALV. Nom. Avium Neotr. p. 134 (1873).—GUNDL. J. f. O. 1874, p. 293; *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 347 (1878).—CORY. Bds. Bahama I. p. 141 (1880); *ib.* Bds. Haiti & San Domingo, p. 133 (1885); *ib.* List Bds. W. I. p. 24 (1885).—COUES, Key N. Am. Bds. p. 571 (1884).

Orcopelia martinica BAIRD. Bds. N. Am. p. 607 (1858).—GUNDL. Repert. Físico-Nat. Cuba, I, p. 299 (1866).—GRAY, Handl. Bds. II, p. 242 (1870).—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 393 (1874).

Columba (Geotrygon) martinica BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 96 (1866).

SP. CHAR. *Male*:—Above chestnut rufous; crown and neck with metallic reflections of green and purple; back showing brilliant purple reflections, becoming less distinct on the rump; a band of white from the base of the lower mandible, under the eye, to the side of the neck, bordered below by a streak of dull purple; underparts showing the breast pale purple, becoming dull white on the throat and abdomen; primaries bright rufous, becoming darker at the tips; tail rufous; legs light red; bill red, tip horn color; iris light brown.

The sexes appear to be similar.

Length, 10.75; wing, 6; tail 4.25; tarsus, 1.05; bill, .90.

HABITAT. Bahamas and Antilles.

GENUS *Starnœnas* BONAP.

Starnœnas BONAPARTE. Geog. & Comp. List, 41, 1838.

✓ *Starnœnas cyanocephala* (LINN.).

Columba cyanocephala LINN. Syst. Nat. I, p. 282 (1766).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 174 (1840).

Starnœnas cyanocephala GOSSE, Bds. Jam. p. 324 (1847).—CAB. J. f. O. 1856, p. 108 (Cuba).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 204 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 299 (1865); *ib.* J. f. O. 1874, p. 291 (Cuba).—CORY, List Bds. W. I. p. 24 (1885).

SP. CHAR.—Top of the head bright blue; a narrow line of black extending through the eye, meeting at the nape, immediately joining a band of white which passes under the eye from the lower mandible and chin; throat glossy black, narrowly banded with white on the last black feathers of the lower throat, forming a white edging to the black throat; the feathers on the sides of the neck narrowly tipped with blue; upper parts purplish brown on the back, shading into olive brown on the lower back and rump; wings and tail brown; breast tinged with purple, shading into rufous brown on the belly; under surface of tail-feathers dark brown, almost black; basal portion of bill and feet deep red.

Length, 11; wing, 6; tail, 4; tarsus, 1.25; bill, .50.

Cuba, common in parts of the interior. On several occasions I have seen the living birds offered for sale in the markets of Havana. Jamaica (*Albrecht*).

✓ *Turtur risoria* of authors is claimed to have been introduced into the West Indies many years ago; I have a specimen in my cabinet labelled "San Domingo." It has also been recorded from St. Bartholomew, Cuba, and Jamaica.*

ADDITIONAL NOTES ON THE BIRDS OF PUEBLO COUNTY, COLORADO.

BY CHARLES WICKLIFFE BECKHAM.

DURING the year 1883 I spent several months at Pueblo, Colorado, and devoted considerable time while there to the birds. The results of my observations, nearly all of which were made in

* *Turtur risoria* SUNDEV. Oefv. K. Vet. Acad. För. 1869, p. 586 (St. Bartholomew).

Turtur risorius MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 302 (Jamaica).

Turtur risorus A. & E. NEWTON, Handb. Jamaica, p. 117 (1881).

the spring, were published in this journal (Vol. II, 1883, pp. 139-144), where are given brief notes on ninety-one species.

In the fall of 1886 I spent a month at the same place, from October 4 to November 4, and all of the thirty-one days but four were spent in the field. The result of this activity is the addition of twenty-two species and subspecies to the avi-fauna, and some interesting notes on birds enumerated in the previous list.

At the time of my arrival most of the transients and summer residents had left for the South, and a good many presumable winter residents had put in their appearance.

The weather during the whole of my stay was typical of the usual Colorado autumn; that is, the next thing to perfection—cloudless skies, cool nights, and warm days, with now and then a dust storm, thrown in doubtless for the purpose of stimulating our appreciation of the good things we had been enjoying in the meteorological line, and preventing us from growing tired of them.

The birds apparently did not like these cold dust storms any better than the unfeathered bipeds, for during their prevalence, it seemed impossible to find one anywhere; the most favored avian haunts were entirely deserted, and no amount of 'beating about the bush' would bring forth even a chirp.

I experienced the usual number of disappointments and surprises, which about balanced each other; I did not find some species that I expected to meet with, and found others which were not expected. Belonging to the former class may be mentioned *Zenaidura macroura* and *Melanerpes erythrocephalus*, both of which were excessively abundant there in the spring of 1883. The latter species, however, is notably inconstant in this respect; its movements being doubtless regulated by the food supply.

Additions to the List given in 'The Auk,' Vol. II, 1883, pp. 139-144.

92. *Gallinago delicata*. But one seen. Flushed from a marsh. October 29.

93. *Circus hudsonius*. Two of these Hawks were seen on October 11. They approached within a very short distance of me and were easily recognized.

94. *Dryobates villosus harrisi*. None were seen in 1883, but in 1886 I found it to be the most abundant Woodpecker about Pueblo, and very tame and unsuspecting; in marked contrast with my experience of *D. vil-*

losus in the East. I had no difficulty in shooting them with a .22-calibre cane gun.

95. *Tyrannus vociferans*. Upon looking over my skins taken at Pueblo in the spring of 1883, I find several representatives of this species which I had then erroneously referred to *T. verticalis*. As I collected three skins of each bird, it is probable that they were equally abundant there at that time.

96. *Ammodramus sandwichensis alaudinus*. One individual of this subspecies was captured October 8, in a field covered with a dense growth of frost-killed *Helianthus*. The coloring is unusually brown for *alaudinus*. Several more were seen on that day, but none before or afterwards.

97. *Zonotrichia querula*. On October 29 I shot a male of this species in the autumnal plumage of the young bird. It was in company with a lot of Juncos and Tree Sparrows. No others were seen. This, I believe, considerably extends the known range of Harris's Sparrow, as I can find no 'record' west of Kansas or Nebraska.

98. *Zonotrichia albicollis*. A male in fine plumage of this essentially Eastern Province bird, was captured on October 24. The specimen is unusually small. Excepting a skin in the National Museum from Oregon, this is believed to be the most western record for the White-throated Sparrow. Perhaps both were mere stragglers. Colonel Goss (*Birds Kan.*, 1886, p. 43) says it is "common" in Kansas, but the note doubtless has reference to the eastern part of the State.

99. *Spizella monticola ochracea*. First detected on October 20, after which date they became very abundant. The males were singing a good deal in low and weak, disconnected tones, peculiar to many young Sparrows which begin 'practising' in the fall. In November I heard *S. monticola* singing in the same way in Kentucky, and observed that the notes of the two birds were precisely alike.

100. *Junco aikeni*. Quite common. Generally in flocks with other Juncos, but upon one occasion I found a flock of ten or twelve which seemed to be composed entirely of *aikeni*. Decidedly one of the shyest birds I ever met with. Whenever I came in sight they all seemed to realize at once that their skins were wanted, judging from the celerity with which they took themselves away. Otherwise their habits seemed to be similar to those of other Juncos. The skins collected show a great deal of variation in the intensity of the slate color, and in the amount of white on the wings.

101. *Junco hyemalis*. Four or five of these birds were collected, and many more were seen. One of them was submitted to Mr. Ridgway for examination, who writes: "No. 2510 is *J. hyemalis* of the type which Dr. Coues proposed to call *J. hyemalis connectens*, and which Mr. Brewster thinks shows intergradation with *J. oregonus*, but which I cannot satisfactorily distinguish from the Eastern bird." Out here the bird itself seemed to share the uncertainty of the ornithologists as to its taxonomic status, for I invariably found it associated with *oregonus*, *annectens*, or

aikeni, apparently not having faith enough in its right to specific rank to go off and 'flock by itself.'

102. *Junco annectens*. Next to *Junco hyemalis oregonus*, this was the most common Junco I met with. I secured a large series, which exhibits considerable variation in size and coloration.

103. *Pipilo fuscus mesoleucus*. Although not observed at all in 1883, I found them quite common here in October, 1886, in suitable stony places. One was shot within the city limits, and I saw another in the yard of a hotel, but they prefer the rocky *arroyos* that are to be found along the Arkansas River and other streams. At a quarrymen's camp, eleven miles west of Pueblo, they were particularly abundant, and so tame that they came and went about the shanties with as much fearlessness as domestic fowls. Their alarm or call-note seemed to me very much like that of the Song Sparrow. All of those collected were very difficult to preserve in good form on account of the loose way in which the feathers were attached to the skin.

104. *Petrochelidon lunifrons*. The bird itself was not observed, but a 'colony' of their nests was seen attached to some limestone cliffs near the same camp above referred to.

105. *Lanius ludovicianus excubitorides*. Through an oversight this bird was not mentioned in any former paper. It was rather common in the spring of 1883, but during my last visit only two were seen.

106. *Helminthophila celata*. But one specimen of this Warbler was obtained. It was shot October 8, out of a party of three or four which were flitting about the top of a large cottonwood just within the city limits. It was a 'bird of the year,' with the orange crown showing quite distinctly. No others were observed.

107. *Sylvania pusilla pileolata*. Two of these birds were taken; one on October 5, in a clump of willows, and another on the 20th, in the same place. I was much surprised to find the Black-cap here as late as the 20th; for we had had several severe frosts prior to that date, enough to have totally destroyed the food of this insect-eating species. It was in fine plumage, and there was no external indication that it had been incapacitated for migration by wounds, moult, etc.

108. *Salpinctes obsoletus*. First seen October 6 in some rocky *arroyos*, eight or ten miles from Pueblo, where one was collected and six or eight more were seen. I again saw one at the same place on October 27. One of the shyest birds I have ever met with.

109. *Certhia familiaris americana*. One was captured and another seen on October 24.

110. *Parus atricapillus septentrionalis*. This Chickadee was encountered but twice; on October 12, when two were shot out of a flock of eight or ten *P. gambeli*, with which they seemed to be on the best of terms, and again on November 2, when three were found together in a thicket. The note is rather faint, and not much like that of the eastern bird.

111. *Regulus calendula*. Observed upon two or three occasions. Two were shot, a male and a female, both 'birds of the year,' and the former, as

I expected (see Pr. U. S. Nat. Mus. 1885, pp. 625-628), had a fully developed red crown-patch.

112. *Turdus aonalaschkæ auduboni*. Three representatives of this species were collected. October 5, 6, and 15. No others were seen.

Additional Notes on Species mentioned in the former paper.

Rallus virginianus. Only one individual seen—in a marsh, November 3.

Ægialitis vocifera. Rather uncommon.

Falco sparverius. But three or four were seen.

Colaptes cafer. Common.

Dryobates pubescens gairdneri. Not common.

Otocoris alpestris arenicola. Very abundant. In my former paper on the birds of Pueblo, the Shore Lark found here was provisionally referred to the form *leucolæma*, but upon a re-examination of the skins collected, the bird turns out to be *arenicola*.

Pica pica hudsonica. Abundant.

Cyanocitta stelleri macrolopha. A single individual was seen on October 6. They were reported to be very abundant at this time in the Green horn Mountains, thirty miles from Pueblo.

Agelaius phœniceus. Common up to the date of my departure.

Sturnella neglecta. Only four or five of these birds were noted during my stay.

Icterus bullocki. On October 24, long after the time when nearly all of the summer residents had migrated, I shot one of these birds in a dense thicket of willow bushes. It was a young female in very dark, soiled plumage, and quite immature, but apparently able to fly very well. It was in company with another which I failed to secure.

Scolecophagus cyanocephalus. Ten or a dozen seen about a slaughter house near town.

Carpodacus frontalis. Not as abundant as in 1883.

Spinus tristis. Very abundant.

Spinus psaltria. Abundant. Generally seen in pairs. All of those I shot were young birds, and several of the males had almost attained the full 'spring plumage.'

Spinus pinus. Not seen until October 31, when several small flocks were observed.

Zonotrichia intermedia. Exceedingly abundant. Barely one-fourth of the males collected had attained the white crown; all of them, both males and females, were birds of the year. They sang a good deal in that sputtering sort of a way familiar to all who have studied the habits of *Z. albicollis* and other Sparrows in the fall. This 'practising' song proceeds, I am sure, from young birds just beginning to exercise their vocal powers, and is doubtless quite disconnected with any sexual excitation. The call-note of this Sparrow is very similar to that of *Z. albicollis*.

Spizella socialis arizonæ. Common in small flocks during the first half of the month; but few were seen towards the last.

Junco hyemalis oregonus. Rather common.

Melospiza fasciata montanus. Not very common.

Melospiza lincolni. In the same places as the last, and about equally numerous during first part of the month.

Pipilo maculatus arcticus. Not common.

Dendroica auduboni. About a dozen individuals altogether were seen, and one was captured as late as October 24.

Parus gambeli. Abundant during the whole time of my stay. Exceedingly tame and, like other Paridæ, partially gregarious. Not seen at all at Pueblo in 1883.

Myadestes townsendi. But one was seen—October 31. The bird was common here in the spring of 1883.

Turdus ustulatus swainsoni. On October 30, I shot a belated Olive-backed Thrush in a willow thicket. It was very emaciated, one leg had been broken, and but one feather was left to 'adorn' its tail—or, perhaps, 'point a moral.' Its presence here at this date is thus easily accounted for.

Merula migratoria propinqua. I saw but four or five individuals during my stay.

Sialia arctica. Rather uncommon. The only one shot was a young male with the blue feathers edged with brown.

Sialia mexicana. Observed only upon two or three occasions, when they appeared to be migrating; coming from the north and disappearing towards the south.

AUGUST BIRDS OF THE CHILHOWEE MOUNTAINS, TENNESSEE.

BY F. W. LANGDON.

THE observations herein recorded were made chiefly in Blount County, East Tennessee, between August 11 and 21, 1886, inclusive. The elevations known as the 'Chilhowee Mountains,' are a group of spurs or offshoots from the Great Smoky Range of the East Tennessee and North Carolina border; and extend, nearly at right angles to the 'Smokies,' as a series of more or less parallel ridges, 1500 to 4000 feet in height, for fifteen or twenty miles in a general northwesterly direction. There are three main ranges answering the above description and these are limited or cut off, so to speak, at their northwestern extremities, by the Chilhowee range proper (called on some maps Chilhowee

'Mountain'). This latter range, about twenty miles in length, and nearly parallel with the 'Smokies,' is pierced (about twenty-five miles south-east of Knoxville) by Little River. A mile west of the 'gap' so formed is Mount Nebo, one of the sub-divisions of the Chilhowee range, and an objective point of the expedition, where are located some chalybeate springs and a hotel. From this locality excursions were made in various directions, notably one to the Great Smoky Mountains, about twenty miles south-east.

The altitudes of the higher peaks of the region range from 2452 feet at Nebo, to 6701—Clingman's Dome in the 'Smokies.'*

The whole Chilhowee group, including the principal range of that name, is situated in Blount and Sevier Counties, and is drained by the Little Pigeon, a tributary of the French Broad; and by Little and Little Tennessee Rivers, flowing into the Tennessee. The drainage of the entire region is thus eventually Ohioan.

The Chilhowee Mountains are not unknown to zoölogical science, Dr. James Lewis having described a species of land-shell, *Helix chilhoweensis*, from that region, about ten years ago.

The topography of the region is alternately mountain and 'cove'—as the little 'pockets' of tillable land, walled in by mountains except where they border the rivers, are called. Generally speaking a road following the river is the only outlet for these 'coves' that can be traversed by wagon.

The 'coves' passed through by the expedition were Miller's and Tuckaleechee,—said to be from six to eight miles in length and about a third as wide; Tuckaleechee being the larger of the two. Both are drained by Little River.

The entire mountain region is well wooded, and towards the 'Smokies' heavily timbered.

At Mt. Nebo the principal trees are poplar, oak, chestnut, chinquapin, hickory, beech, sweet and black gums; a few walnut, butternut, and birch; with a sprinkling of pines throughout and of small spruce along ravines and small streams. The undergrowth is chiefly of poplars, gums, dogwood, chinquapin, and,

* *Vide* Guyot, in *Am. Jour. Sci. and Arts.*, 2nd ser., Vol. XXIV, p. 277; and Safford, 'Geology of Tennessee,' Nashville, 1869.

occasionally along streams, witch-hazel; in many places the 'mountain laurel' forms impenetrable thickets for miles.

'Pine Mountain,' adjoining Nebo on the east, and separated from it only by a shallow ravine, is clothed on its upper two-thirds with a mantle almost exclusively of pine, while its basal third corresponds closely with Nebo.

The foot-hills surrounding Nebo are mostly cleared of timber and under cultivation, corn, wheat and sorghum being the principal crops, with some cotton and tobacco. This is the case also in the 'coves' traversed on the way to the 'Smokies.' As the 'coves' are left behind, however, and the Great Smoky Range is approached the scenery becomes bolder in character, the route lying over mountainous ridges and the horizon shut in on all sides by range after range of mountains from three to six thousand feet in height. Along Little River the scenery in many places might fairly be called grand.

Night overtakes us on Scott Mountain at the home of Mr. A. J. Dorsey and his estimable family, whose hospitalities much enhance the enjoyment of the trip. Here we leave our team, and another day finds our party, ten in number, on foot for the 'Smokies,' seven miles distant, loaded down with guns, ornithological material, fishing tackle, photographic apparatus, cooking utensils, and provisions. Our headquarters on Defeat Mountain, a spur of the Smoky Range, was at a cattle-herder's camp, a small log cabin, situated at an altitude of perhaps 4000 feet, in the heart of a giant spruce and poplar forest; many trees of both species measuring six feet in diameter and fifty feet or more to a limb. Here, on a gentle slope covered with a velvety carpet of moss, partridge-berry vine, and spruce needles, we were lulled to rest by the babbling of the waters over the rocky bed of a neighboring trout brook (middle fork of Little River); this, with the *hoot-to-toot* of the Great Horned Owl and the notes of a full orchestra of katydids, furnished a symphony eminently appropriate to its surroundings. The 'patter of the rain on the roof,' however, which ensued later, was a musical event not so highly appreciated, since it necessitated the crowding of ten men into a cabin ten feet square.

As the sunbeams tip the crest of the 'Smokies' and struggle in splinters through the dark evergreen canopy about the camp, our ornithological eyes are greeted with the sight of such species

as the Hooded, the Worm-eating, Black-throated Blue, Cerulean, Blackburnian, Chestnut-sided, Black-throated Green, Black-and-white Creeping, and Canada Warblers (all taken within a few hours); whilst an occasional Pileated Woodpecker, or a party of Titmice or Blue Jays, add variety to the scene and sounds. Even the herpetologist might find food for contemplation in the huge rattlesnake with nine rattles and a button, killed by one of our photographic artists within a stone's throw of the camp; and the epicure sees food of a more substantial character in the speckled beauties supplied to our table from the neighboring stream.

Such localities as the one just described, at the junction of the poplar and spruce belts (altitude 4000 to 4500 feet) seemed a very paradise for the Mniotiltidæ and they were here found in greater numbers, both of species and of individuals, than elsewhere. Here, also, blackberries were in the height of their season; the deciduous foliage was as bright and fresh as in Ohio in May and June, and insect life correspondingly abundant.

With respect to the above-mentioned Warblers, it may be observed that their habits were not indicative of any migratory movement; on the contrary they appeared to be 'at home' in a summer resident sense; and the fact that the dates of observation are from two to four weeks ahead of their fall migration at Cincinnati may be considered as confirmatory of this view. Mr. Brewster's* observations in the adjoining portion of North Carolina, during May and June, 1885, are also to be considered in this connection.

Incomplete as it necessarily is, owing to lack of time and the unfavorable season for collecting, the present list fills several gaps in Mr. Brewster's paper just referred to, viz: *Totanus solitarius*, *Ægialitis vocifera*, *Falco sparverius*, *Megascops asio*, *Bubo virginianus*, *Helmitherus vermicivorus*, *Dendroica cærulea*, and *D. vigorsii*; and adds five species and two subspecies to the list of birds heretofore recorded from the State †; namely: *Ampelis cedrorum*, *Dendroica pensylvanica*, *D. cærulea*, *D. cærulescens*, *Sylvania canadensis*, *Dryobates villosus*, and *Vireo flavifrons alticola*.

* An Ornithological Reconnaissance in Western North Carolina.—The Auk, 1886, Vol. III, pp. 94-112 and 173-179.

† Vide Fox, List of Birds found in Roane County, Tennessee, during April, 1884, and March and April, 1885.—The Auk, III, 1886, pp. 315-320.

For valuable assistance in making the collection, as well as in saving skins that would otherwise have been lost, the writer is indebted to his colleague, Dr. G. M. Allen, of Cincinnati; and for an enjoyable time in other respects to the members of the party in general, not forgetting our two guides, Mr. A. J. Dorsey and son 'Jake.'

As regards the residents of the region in general, we found them intelligent, hospitable and obliging.

The altitudes mentioned are estimated, and based on information derived from various sources.*

The nomenclature is that of the A. O. U. Code and Checklist of North American Birds, 1886.

Total number of species and sub-species noted, 63.

201. *Ardea virescens*. GREEN HERON.—Little River, near Mt. Nebo; two specimens.

256. *Totanus solitarius*. SOLITARY SANDPIPER.—One individual observed August 21, at a roadside pond near Maryville, in the valley.

263. *Actitis macularia*. SPOTTED SANDPIPER.—Three specimens seen along Little River in the 'coves'; others at Henry's Mill.

273. *Ægialitis vocifera*. KILLDEER.—One heard in the suburbs of Knoxville.

289. *Colinus virginianus*. BOB-WHITE.—Abundant in the 'coves.' Large flock of young barely able to fly, observed August 16, in Tuckaleechee; doubtless a second brood.

300. *Bonasa umbellus*. RUFFED GROUSE.—One individual observed on Mt. Nebo.

310. *Meleagris gallopavo*. WILD TURKEY.—Although no specimens were secured by us, our guide had flushed a flock of half-grown young a week previous. Dr. T. H. Kearney, of Knoxville, also informed us that he was with a party that killed one out of a flock a few days previous, within a mile or two of our camp. They are said to feed largely on 'huckleberries,' three species of which are found in abundance on the 'ridges.'

316. *Zenaidura macroura*. MOURNING DOVE.—Common in wheat-stubble in the 'coves.'

325. *Cathartes aura*. TURKEY VULTURE.—Common.

360. *Falco sparverius*. AMERICAN SPARROW HAWK.—Several observed in the 'coves.' Other species of Hawks, large and small, were noted, but at too great a distance for identification. Those most satisfactorily recognized were the Red-tailed and Red-shouldered.

373. *Magascops asio*. SCREECH OWL.—Identified by note; one individual only; altitude 2000 feet.

375. *Bubo virginianus*. GREAT HORNED OWL.—One heard at 4000 feet.

* *Vide* Safford, *Geology of Tennessee*, 1869; and Guyot, various papers in *Am. Journ. Sci. and Arts*, 1857 *et. seq.*

390. *Ceryle alcyon*. BELTED KINGFISHER.—Two or three specimens observed on Little River in the 'coves.'

393. *Dryobates villosus*. HAIRY WOODPECKER.—Several specimens taken, ranging from the valleys up to 2000 feet, do not differ appreciably from Ohio examples, and are referred to this form by Mr. Ridgway.

394. *Dryobates pubescens*. DOWNY WOODPECKER.—The same remarks are applicable to the present species.

405. *Ceophlœus pileatus*. PILEATED WOODPECKER.—Not common, even in heavy timber, and everywhere very shy. Of the six or eight individuals observed, two, male and female, were secured with some difficulty. Ranging from the valleys up to 4000 feet or more, their favorite foraging field seemed to be on the larger spruce and poplar trunks, within twenty feet of the ground, and such places were studded with bill-holes, in regular rows, resembling those of the 'Sapsuckers.' Their notes resemble the rapid, oft-repeated *chuck-up-chuck-up-chuck-up* of the Common Flicker, but are lower-pitched and repeated more slowly.

Of the specimens taken, one had its stomach filled with fourteen pokeberries, and the intestines deeply stained thereby a few hours after death. The peritoneal cavity of this bird contained a slender tape-worm, about 15 inches long and 1-32 inch wide; and in the sub-cutaneous tissue of the neck were two thread-like, round worms, of a pale pinkish tint and about three-fourths of an inch in length. Irides of adult male, pale yellow, finely speckled and mottled with red.

406. *Melanerpes erythrocephalus*. RED-HEADED WOODPECKER.—Common about clearings in the foot-hills and 'coves.' Not observed above about 1500 feet.

420. *Chordeiles virginianus*. NIGHT-HAWK.—Five observed flying about at midday, in Tuckaleechee Cove; others at dusk on Scott Mountain.

423. *Chætura pelagica*. CHIMNEY SWIFT.—Common as high as 5000 feet and throughout the 'coves.' The scarcity of houses and suitable chimneys for breeding purposes probably necessitates the resort of this species to its original homes in hollow trees. (See Brewster, *op. cit.*)

428. *Trochilus colubris*. RUBY-THROATED HUMMINGBIRD.—Common up to 3000 feet.

444. *Tyrannus tyrannus*. KINGBIRD.—Observed in parties of six or eight about 'deadenings' in the 'coves.' None seen in the mountains.

461. *Contopus virens*. WOOD PEWEE.—The common Flycatcher of the region; apparently even more abundant than in Ohio. Noted everywhere up to 4000 feet or more.

The scarcity or absence of the *Empidonaces* was a noteworthy feature of the region; no member of the genus being detected, though closely looked for in apparently favorable localities.

477. *Cyanocitta cristata*. BLUE JAY.—An ornithological tramp throughout the region, in straggling parties of from three to six individuals; ranging as high as 4000 feet.

488. *Corvus americanus*. AMERICAN CROW.—Common in the valleys and observed up to about 3000 feet.

? 511*b*. *Quiscalus quiscula*. BRONZED GRACKLE.—Observed only in the suburbs of Knoxville. As no specimens were obtained, the subspecies can only be decided by inference—hence the (?).

For evidence that this is the prevailing form in Tennessee. *vide* Ridgway, Auk, 1886, III, p. 318, footnote.

529. *Spinus tristis*. AMERICAN GOLDFINCH.—Common in the 'coves,' and ranging up to 2500 feet.

560. *Spizella socialis*. CHIPPING SPARROW.—The common Sparrow. Abundant throughout the 'coves' in cornfields, etc., and a few observed on a piney ridge at an altitude of about 4000 feet.

563. *Spizella pusilla*. FIELD SPARROW.—Identified by note, and in one instance only, in a little 'cove' at an elevation of 3000 feet.

587. *Pipilo erythrophthalmus*. TOWHEE.—One specimen taken at an altitude of 2000 feet; others heard in full song.

593. *Cardinalis cardinalis*. CARDINAL.—Common about clearings, and observed up to 3000 feet.

Though in full song, their notes were quite sibilant in character rather than full and rounded as in Ohio.

598. *Passerina cyanea*. INDIGO BUNTING.—Very common in the 'coves' and lowlands; not observed above 1000–1200 feet.

(—). *Passer domesticus*. EUROPEAN HOUSE SPARROW.—A few observed at Knoxville and Maryville.

608. *Piranga erythromelas*. SCARLET TANAGER.—One specimen, a male in immature plumage, taken at 2500 feet.

610. *Piranga rubra*. SUMMER TANAGER.—One taken at 2000 feet; others heard.

611. *Progne subis*. PURPLE MARTIN.—Noted only at Knoxville and Maryville.

619. *Ampelis cedrorum*. CEDAR WAXWING.—One specimen in immature plumage, taken at 3000 feet.

624. *Vireo olivaceus*. RED-EYED VIREO.—Very common everywhere up to 4000 feet. The many specimens examined failed to show the peculiarities in plumage noted by Mr. Brewster* in a single specimen from the Black Mountain in North Carolina.

628. *Vireo flavifrons*. YELLOW-THROATED VIREO.—Two specimens; Pine Mountain, at 1500 feet. One of these is a 'first plumage' bird, just acquiring fall dress.

629*c*. *Vireo solitarius alticola*. † MOUNTAIN SOLITARY VIREO.—Three specimens taken; one at 1500 feet, on Pine Mountain (Chilhowee Range), and two at 4000 feet, on Defeat Mountain (Smoky Range).

Mr. Brewster has kindly compared these for me with the types in his collection and writes: "I am satisfied that the two are identical. In fact I find no differences of importance except such as would be expected in view of the fact that my birds are all in perfect nuptial plumage, yours in ragged, moulting summer plumage."

* Auk, III, 1886, p. 173.

† *Vide* Brewster, Auk, III, 1886, p. III.

On comparison with Ohio specimens of *V. solitarius*, the larger size, especially of bill and wing, and the generally darker color of the upper parts in the Tennessee birds are very noticeable.

631. *Vireo noveboracensis*. WHITE-EYED VIREO.—One specimen taken; heard several times in the 'coves.'

636. *Mniotilta varia*. BLACK-AND-WHITE WARBLER.—Very common, ranging from the valleys up to 3000 feet.

639. *Helmitherus vermivorus*. WORM-EATING WARBLER.—Taken in dense laurel and blackberry thickets on Smoky Range, up to 4000 feet; and about ravines at Mt. Nebo, 2000 feet. Note a feeble *chip*.

654. *Dendroica cærulescens*. BLACK-THROATED BLUE WARBLER.—Rather common in dark spruce forest about the head of Little River, frequenting laurel thickets and undergrowth of poplar, beech, and sweet gum. Altitude about 4000 feet.

658. *Dendroica cærulea*. CERULEAN WARBLER.—Common in same localities as the last, but frequenting the higher trees.

659. *Dendroica pensylvanica*. CHESTNUT-SIDED WARBLER.—Two specimens; 2000 to 2500 feet, in oak woods.

662. *Dendroica blackburniæ*. BLACKBURNIAN WARBLER.—The most abundant species of the family; ranging from 2000 to 4000 feet, and keeping mostly in the higher tree tops. Adults of both sexes and young of the year taken together.

667. *Dendroica virens*. BLACK-THROATED GREEN WARBLER.—Several specimens taken at 4000 feet, in spruce woods.

671. *Dendroica vigorsii*. PINE WARBLER.—One specimen only; Pine Mountain, 1500 feet. A young in first plumage just acquiring autumnal dress.

674. *Seiurus aurocapillus*. OVEN-BIRD.—Taken at altitudes ranging from 1000 to 2000 feet.

681. *Geothlypis trichas*. MARYLAND YELLOW-THROAT.—Common in the valleys, in the weeds bordering streams.

683. *Icteria virens*. YELLOW-BREASTED CHAT.—One taken at base of Mt. Nebo; others heard.

684. *Sylvania mitrata*. HOODED WARBLER.—Common in little weed patches near the springs at Mt. Nebo (2000 feet); and one pair observed apparently 'at home' in a shady ravine near our camp on Defeat Mountain (4000 feet), keeping chiefly on or near the ground and moss-covered rocks. Note a single clear *tschip*, resembling that of the Cardinal but much more resonant and musical in tone. This note was repeated at short intervals (one to two minutes) for hours at a time, as the birds foraged for insects, the dark, green carpet of moss and partridge-berry vine forming an effective contrast with their bright, yellow plumage.

686. *Sylvania canadensis*. CANADIAN WARBLER.—A pair taken at 2000 feet, on young poplars in a laurel thicket, August 19.

687. *Setophaga ruticilla*. AMERICAN REDSTART.—Several observed about shady ravines, ranging from 1000 to 2500 feet.

704. *Galeoscoptes carolinensis*. CATBIRD.—A few only observed, ranging from the lowlands to 2000 feet,

718. *Thryothorus ludovicianus*. CAROLINA WREN.—Common everywhere up to 3000 feet.

727. *Sitta carolinensis*. WHITE-BREASTED NUTHATCH.—Common, ranging from 1000 to 3000 feet.

731. *Parus bicolor*. TUFTED TITMOUSE.—Very common in the valleys and observed as high as 3000 feet.

736. *Parus carolinensis*. CAROLINA CHICKADEE.—Common with the preceding species, of which it was an almost constant companion, as in Ohio. No *P. atricapillus* observed, although carefully looked for.

751. *Poliophtila cærulea*. BLUE-GRAY GNATCATCHER.—Common, ranging from the lowlands up to 3000 feet.

755. *Turdus mustelinus*. WOOD THRUSH.—Specimens taken at 2000 and 4000 feet.

761. *Merula migratoria*. AMERICAN ROBIN.—While standing in the cupola of the University at Knoxville, a small Hawk, resembling the Pigeon Hawk, passed close by. Following it with the eye across an adjoining pasture, it was observed to flush a bird from a fence corner and, after a stern chase of thirty or forty yards, to seize it. A lively tussel ensued, after which the Hawk rose, heavily weighted, and took refuge in some neighboring trees. A few feathers secured at the site of the struggle have been kindly identified by Mr. Ridgway as those of a young Robin, and on these rests the admission of the species to our list, as no other specimens were observed.

766. *Sialia sialis*. BLUEBIRD.—A few noted about 'deadenings,' in the 'coves.'

SOME RARE FLORIDA BIRDS.

BY W. E. D. SCOTT.

Gelochelidon nilotica. GULL-BILLED TERN.—This species appears to be rare on the Gulf Coast. The only record I have of its occurrence is a male taken at John's Pass, Hillsboro' County, December 17, 1886.

Chondestes grammacus. LARK FINCH.—On September 19, 1886, I saw a single individual of this species in my garden at Tarpon Springs, Hillsboro' County. Later, my friend, Mr. J. W. Atkins, took an adult female at Punta Rossa. Mr. Atkins has kindly sent me the bird for identification. It was taken September 26, 1886.

Vireo altiloquus barbatulus. BLACK-WHISKERED VIREO.—

On my trip South during May, 1886, I heard at a number of points, but particularly near Punta Rossa, the song of a *Virco* that was not familiar to me. The birds always kept in the deepest mangrove thickets, so that I was never able to procure one. But at Punta Rossa, where I met Mr. Atkins, who was at that time connected with the telegraph service at that point, we discussed the bird, and I called his attention to what I took to be one singing in a mangrove swamp not far away. I was, at the time, on my way home, and being somewhat pressed for time I could not well stay to investigate the matter. Shortly after my return Mr. Atkins wrote me of the capture of four of the birds in question, and later sent me two skins which were, as we had surmised, of this species.

Both of those he sent to me were males taken on the 22d of May, 1886, near Punta Rossa.

During the summer, about the middle of July, I thought I detected the species on a single occasion near Tarpon Springs, and I feel quite sure of this now, though unable to capture the bird at that time.

I visited Tampa, in October, and on looking at some skins obtained by Mr. Stuart, in June, 1886, in the immediate vicinity of the city of Tampa, a single representative of this species at once attracted my attention. It was not labelled, but Mr. Stuart remembered its capture and thought it an adult male. It is now in my collection. I believe this bird to be a common summer resident on the Southern Gulf Coast of Florida.

***Dendroica discolor*.** PRAIRIE WARBLER.—While at Punta Rossa last spring, Mr. Atkins showed me a Warbler which, though in exceptional plumage, must be referred to this species. Mr. Allen has very kindly examined it and compared it with a large series of Prairie Warblers, and the above conclusion is largely due to his careful examination. The appended description will show the main differences in coloration between this and the typical bird.

No. 129, collection of J. A. Atkins. "Punta Rossa, 16th April, 1886. ♀?" (The sex mark on the label is followed by an interrogation mark; the size of the bird, however, would seem to indicate that it is a female, if it be the species in question.) Similar to female *D. discolor*. Above obscure olive green, brighter on the crown and rump. Sides of nape and upper tail-coverts strongly suffused with ashy; interscapulars faintly tinged with brownish. Tail and wings about as in typical *discolor*. Loes dusky; a

supraloral stripe of orange, from base of bill to eye, including upper eyelid; a patch of orange below the eye, more intense on the right side than on the left, extending back over the upper part of the ear-coverts, and forward narrowly (on the left side only) to the rictus. Chin and part of the throat intense cadmium yellow. There is also a very appreciable tinge of this color on the yellow of the breast. The maxillary stripe is ash mixed with black. The streaks on the sides are nearly obsolete. "Length, 4.50; extent, 6.37; wing, 2.00; tail, 1.75" (collector's measurements from the fresh bird).*

Mr. Atkins says that at the time he took this bird he saw another which appeared to him to be identical with it, but a careful search later in the season has failed to bring to light any other specimens.

THE PRESENT CONDITION OF SOME OF THE BIRD ROOKERIES OF THE GULF COAST OF FLORIDA.

BY W. E. D. SCOTT.

First Paper.

On Friday, April 30, 1886, I started from the town of Tarpon Springs in Hillsboro' County, Florida, to make a cruise of a few weeks along the west coast, to investigate matters ornithological. It was a journey without any objective point. I had in mind only to go as far south as possible, in the time at my disposal, passing over some ground that had been familiar to me six years before.

* [The specimen in question is remarkable for its small size, it being considerably smaller even than average West Indian examples of females of *D. discolor*; one (of several kindly loaned me by Mr. Ridgway for comparison), however, proves to be fully as small, while others are somewhat larger. In a large series from Florida in the Cambridge Museum of Comparative Zoölogy, with which I have compared Mr. Atkins's specimen, none are quite so small, but the ashy coloring of the maxillary stripe, the auriculars, and sides of the nape is met with in other specimens, and one or two show traces of the peculiar 'hyperchromatism' displayed by the specimen from Mr. Atkins. No single specimen, however, has all of these ashy markings combined, they being found separately in different specimens. The asymetry in respect to the heightened color on the two sides of the head suggests that the specimen in question is not only exceptionally small, but abnormal in coloration. The general effect is unique, and at first sight suggests probable specific distinctness from *D. discolor*.—J. A. A.]

The boat chartered for the trip was a small sloop of about five tons measurement, called the 'Tantalus.' I was accompanied only by the captain of the boat, and Mr. Dickinson, my assistant. The somewhat detailed account of this journey presented in the following pages is given in the form of a diary, having as its basis the notes registered in my log of each day's events.

April 30. Left Tarpon Springs at 10 A. M., and going out of the Anclote River, our boat was headed southward. As we passed out of the mouth of the river, the buoys, beacons, and stakes that mark the channel were made very conspicuous by the numbers of Florida Cormorants (*Phalacrocorax dilophus floridanus*) that were alighted on every part of the structures that afforded a roosting place. These birds have a 'rookery' or breeding and night roosting place on Lake Butler, about three miles inland from the mouth of the river, and every morning and evening are to be seen passing to and from the salt water of the Gulf, which is their principal fishing ground. They fly in flocks of from six to forty, and now and then a single bird or pair is to be seen passing over. At the rookery breeding fairly begins by the 10th of May, though a few birds may lay their eggs a little earlier. The birds are among the very few still found in Florida that are unsuspecting, being fairly tame and familiar, passing close over the tops of the cottages and houses making up the town of Tarpon Springs in their daily flights over the land between the fresh and salt water.

The two islands in the Gulf of Mexico, three miles off the mouth of the Anclote River, are known as the Anclote Keys, and are the headquarters of the fleet of Key West vessels employed in the sponge fishing. Six years ago the smaller of these two keys was a 'rookery,' both for breeding and roosting, for countless pairs of birds. There were literally thousands of them. The several acres of breeding ground are closely wooded with mangrove and other trees and bushes, and each tree or bush of any size contained several nests. There were also the several kinds of Herons to be found here (I have records of *Ardea herodias*, *A. egretta*, *A. candidissima*, *A. tricolor ruficollis*, *A. cærulea*, *A. virescens*, *Nycticorax nycticorax naevius*, and *N. violaceus* as all occurring and probably breeding on this island). Cormorants in great numbers, and Brown Pelicans (*Pelecanus fuscus*). Besides, during May and June, hundreds of pairs of Frigate

Birds (*Fregata aquila*) roosted here each night, though these, so far as I am aware, did not breed here. This was the state of affairs existing on the northern of the two Anclote Keys six years ago, according to my own observations, and those of Mr. Devereaux, who was then my assistant. This morning in passing these islands I saw but four Pelicans (they were flying by), two or three frightened Herons, and a few Gulls and Terns. It is safe to say that not a dozen pairs of Herons breed at present on the island, and that the other birds spoken of have all been driven away or killed. Once, at this time of the year, a perfect cloud of birds were to be seen hovering all day over the islands, so tame and unsuspecting that they had little or no fear of man; but now the place is almost deserted by birds and the few that are left have become, by being hunted, as wary as the traditional deer.

We sailed to-day as far as Little Clearwater Pass, where we anchored and spent part of the afternoon and night. On the way down to Clearwater Harbor we passed inside of Hog Island, situated to the east of it. Here another deserted heronry,—a small mangrove island, which, when I passed it in 1880, had many Herons breeding on it,—stood a silent witness of wanton destruction. At Little Clearwater Pass the birds noted were numbers of Royal Terns (*Sterna maxima*), Laughing Gulls and Black Skimmers, a few Brown Pelicans and Willets, and Wilson's Plover. We staid here all night.

Saturday, May 1. The wind, which was blowing hard till late yesterday, died out in the night, but at sunrise there was almost a gale from the northwest, and we did not get away until 12.30 P. M., John's Pass, fourteen miles below, being the point where we intended to harbor for the night. With a beam wind this place was soon reached, and at 3.30 P. M. the sloop was again at anchor in the little harbor inside of the Keys.

It was important to reach here early, as I particularly wished to observe a rookery which has been ever present in my mind since visits to the same point in April, 1880.

At that time I made two visits of a day and night each to this same rookery, and among the myriads of birds that were breeding and roosting, the particular abundance of the Roseate Spoonbill, the Reddish Egret, and all of the common Herons, as well as the White Ibis, will never be forgotten. It is enough to state without going into great detail, that in one flock at that time were at

least two hundred wonderfully colored Spoonbills, and that the numbers of the other species were many times greater.

The numerous islands inside of the outer keys at this point are mostly wooded with one or more of the several kinds of mangrove, and vary in area from one to several hundred acres. The two nearest the mouth of the pass are small; the larger one may have an area of seven and the smaller of not more than two acres. They formed the site of the rookery. Looking carefully over both I could see no birds when we anchored, but as the sun began to get low in the west, a few, possibly fifty in all, shy and suspicious Herons straggled in to roost on the smaller of the two Keys, and a flock of Fish Crows (*Corvus ossifragus*) were the only visitors at the larger. Most of the Herons were *A. ruficollis tricolor*, but there were several *A. egretta*, *A. candidissima*, and *A. caerulea*, and perhaps a dozen *A. rufa*, and three of the so-called *A. p. calei*. No Spoonbills, not a single White Ibis—in fact an utter transformation from the happy and populous community of only a few years before.

Of other birds seen here my log only speaks of some Royal and Least Terns, a flock of Willets, and a single Kingfisher.

Sunday, May 2. We were up and away early, with a pleasant northeast wind, and instead of going out of the pass again our route threaded in and out among the inner islands, passing through Boya Sieya into Tampa Bay proper. In Boya Sieya is an enormous mangrove island, known throughout the region as the Maximo Rookery, and also intimately associated in my mind with the name of A. Lechvallier, a Frenchman, who, when I was last at this point, had his home in a little house on the mainland of Point Pinallas, about half a mile from this rookery.

Being anxious to get south as rapidly as possible I did not examine Maximo Rookery carefully, but passing it only half a mile away I could see no birds. On my return, however, I made an extended search through the hundreds of acres of mangrove, and will leave the subject till then. But it may be as well to state distinctly here that I am very credibly informed that during his several years' residence at this point, the old Frenchman and his gunners killed many thousands of the several species of birds there so abundant. These were particularly the several species of White Herons and countless numbers of the Brown Pelican.

Passing on we crossed Tampa Bay to the mouth of the Manatee

River, thence following the bay coast down to the mouth of Sarasota Bay, and that night at six anchored at the town of Sarasota. To-day we had sailed over some sixty miles, in a region once famous for its teeming bird life, but now the birds were only conspicuous by their scarcity. During the entire day I only noticed a few scattering Herons, one or two Man-o'-War Birds, four or five Brown Pelicans, and a few Gulls.

Monday, May 3. Left Sarasota at 6.25 A.M. Day clear; wind in morning east to northeast, moderate. We sailed out through Big Sarasota Pass and were soon in the Gulf, running down the coast with a fair wind. About five miles off shore were many Brown Pelicans fishing among great schools of mullet, and a few Man-o'-War Birds sailing about in graceful evolutions. Here, too, were some Laughing Gulls, and now and then a few Royal or Forster's Terns, in small flocks of may be a dozen individuals. This was about a fair sample of the bird life all the forty miles down to Boca Grande, the principal entrance to Charlotte Harbor.

Here we entered, and going, after getting fairly inside, about two miles to the northward along the shore of Gasparilla Island, at 5.25 P.M. we anchored for the night. We were not more than a hundred yards from the shore of the island and almost at once I went ashore in quest of birds.

The island is a long, low strip of sand, wooded with a heavy growth of cabbage palms and some kinds of low palmetto. Beside these were two kinds of mangrove growing profusely, as well as a perfect tangle of low undergrowth of shrubs and vines. All of the commoner small species that one would expect were represented, and I saw a single pair of Reddish Egrets, two White Ibises, and three Louisiana Herons. The bird that particularly attracted my attention was a single male Bobolink, in *full spring* plumage. This seemed to me unusual, but I have seen large numbers of the same species in early fall, about Tarpon Springs. They appeared on the 26th of August, 1886, at the point indicated. The first flock was small, not over twenty birds, but in a week they were abundant and in very large flocks. About the middle of October they began to disappear, and by November first all had left the region about Tarpon Springs.

Tuesday, May 4. Charlotte Harbor! How many wonderful tales of the great heronries, with the myriads of birds every-

where conspicuous, have been told of this region. Indeed, only a few years ago bird life was so abundant about the many islands dotting the harbor, that it would be difficult to exaggerate in regard to their numbers.

We were up early, for I had determined to explore every island and bay about the harbor, and knew that at least a week or ten days would be a short time for the work in hand. An *all day's* sail along the northern shore of the bay, passing mangrove islands which seemed to have been created for the home of many species of Heron, Ibis, and other water birds which once congregated here in vast numbers.

Captain Baker, who sailed the sloop, an old sponger and fisherman who had been familiar with all of this country for twenty-five years or more, pointed out to me among these islands four, at different points, where he assured me vast rookeries had existed. One of perhaps sixty acres he said he had seen so covered with 'White Curlew' that, to use his own words, "it looked from a distance as if a big white sheet had been thrown over the mangroves." And though we passed by, as I have said before, islands that plainly showed, by excrement still on the ground, that once countless numbers of birds had lived there, sailing probably over about forty miles in all, I did not see a rookery that was occupied even by a few birds, and I only saw a few stray Gulls, Pelicans, and two Herons in the whole day's cruise. About four o'clock, P.M., we reached a little settlement at the mouth of Pease Creek, called Hickory Bluff, and I went ashore to get what information I could regarding birds.

The postmaster and several other citizens with whom I talked all agreed that five or six years before birds had been plenty at the rookeries, and that it was no trouble to get hundreds of eggs to eat or to kill as many birds as one cared to. But that for the past two years birds had been so persecuted, to get their '*plumes*' for the Northern market, that they were practically exterminated, or at least driven away from all their old haunts. I further learned that all of the gunners and hunters in the country round had up to this year reaped a very considerable income from this source. Birds were killed, and the plumes taken from the back, head, and breast, and the carcass thrown to the Buzzards. Fort Myers, on the Caloosahatchie, was the central local market for this traffic, where several buyers were always ready to pay a high

cash price for all plumes and fancy feathers. The force of resident buyers was increased during the winter of each year by taxidermists (?), and buyers from the north, who came, in some cases at least, provided to equip hunters with breech-loaders, ammunition, and the most approved and latest devices for carrying on the warfare. One man, who had come down in this way for the past four years, was down south now, and regularly employed from forty to sixty gunners, furnishing them with all supplies and giving so much a plume or *flat skin*, for all the birds most desirable. The prices, I was told, ranged from twenty cents to two dollars and a half a skin, the average being about forty cents apiece.

All this I afterward fully corroborated, and met, personally, the gentleman in question, to whom I shall have occasion later to refer more at length.

We staid at Hickory Bluff all night, as I had determined to explore the Myiakka River, which, I had always heard, was a bird paradise, and I was told at Hickory Bluff that birds were still to be found there in large numbers.

Wednesday, May 5. Left Hickory Bluff early, but the wind being very light and ahead, we were till nearly night reaching a point about ten miles up the Myiakka River, which is near the head of navigation for boats drawing two feet of water. The rookeries described to us as being near the mouth of the river, and where I was told birds had abounded the season before, I found to be deserted; only here and there did I see anything of bird life, and in such cases only scattering individuals of the Florida Cormorant, White Ibis, and the commoner species of Herons. Along the bank of the river, where we camped in the late afternoon, were many Gray Kingbirds (*Tyrannus dominicensis*), the first I had seen on the cruise, and the first I had noted this season. Going up the river we sailed close to three Ducks which, as they rose out of the water, I determined were *Aythya marila nearctica*. Near where we anchored were a number of Sandhill Cranes (*Grus mexicana*) feeding and now and then uttering their peculiar cry. A few Brown Pelicans and a single Man-o'-War Bird complete the list of birds observed this day.

It may be well to remark that the river is still salt at the highest point we reached, and that it is said to be brackish forty miles from its mouth.

Tuesday, May 6. As I had been told at Hickory Bluff that the largest of the rookeries was still further up the river, we took the small boat serving as our tender, and early in the morning started to explore. About a mile and a half from where we had anchored, on passing a sharp bend in the river, we saw a small mangrove island fairly white with birds, most of which I presently discovered to be the small White Egret (*Ardea candidissima*), and with them a number of *Ardea ruficollis tricolor*, and a few *Ardea egretta* and *Ardea carulea*. The birds were in some cases still building, though some had finished their nests and had laid from one to three eggs. The *Ardea carulea*, of which there were perhaps half a dozen pairs, were mainly in the blue plumage, though I saw a number in the white and parti-colored phases, and a female in this last condition, taken later in the day, proved on dissection to be breeding, having a fully developed egg with hard shell in the oviduct.

Up to the present time, though I had been away on the trip for a week, not a single bird had been collected. So after dinner I went to the neighborhood of the rookery, where about two hundred birds in all were congregated, and in the course of the afternoon I took some twenty birds of the several kinds above enumerated, a pair or so of each. The rookery had evidently often been disturbed before, and the birds were very shy and only to be taken at long range, flying. The whole island was wooded with mangrove and was perhaps half an acre in extent.

Friday, May 7. Spent most of the morning in making the birds I had killed the afternoon before into skins, and later in the day explored the river further up for about four miles. This search was unrewarded, and so we came back to the sloop, determining to go out of the river and continue the exploration of Charlotte Harbor in the morning.

While anchored at this point I was visited by two plume hunters, each separately, who wished to dispose of numbers of plumes of Little White Egrets and other birds they had collected. They seemed much surprised to find that I did not wish to buy the material in question, and told me that I was the only *bird man* they had met who was not eager to obtain plumes. The name of one of these men I did not ascertain, but the other was Mr. Abe Wilkerson, of whom I shall have more to say later. The prices they asked for plumes of Herons were about as follows:

Ardea egretta, 40 cents (the only part of the bird used being the long feathers of the back); *Ardea candidissima*, 55 cents (in addition to the back plumes, those of the throat or breast and head are utilized); *Ardea rufa*, 40 cents (simply the back plumes); *Ardea ruficollis tricolor*, 10 to 15 cents (only the plumes of the back are utilized); *Ardea wardi* (plumes of breast and back), 75 cents to one dollar; *Ajaja ajaja* (*flat skin*) \$2.00 to \$5.00. A *flat skin* is the bird skin split underneath from the bill to the vent and skinned so that the whole is perfectly flat when dry. Generally the legs are cut off, and sometimes the wings, and even the head.

These two hunters both told me of the man of whom I had heard at Hickory Bluff, and gave me much interesting information regarding the traffic in plumes. Wilkerson told me of the birds which once inhabited the rookeries of this river in great abundance. He had made, he said, many a dollar from plumes obtained here, and spoke of the little rookery I have described above as too small to be hardly worthy of the name. He was on his way to some lakes far up the river, in the interior, where he hoped to find large rookeries of the Little White Egret, which is regarded as the best paying species. His method of obtaining birds was with a 22-calibre Winchester rifle. With this he could go into a rookery and secrete himself, and by using the lightest kind of cartridge get many more birds than with a shot-gun, as the report is hardly greater than the snapping of a branch, and is scarcely noticed by the birds. In this way he said he had been able in a large rookery down south to get over four hundred 'plume birds' in less than four days.

On asking him about Reddish Egrets, I found he was full of information. He told me of a rookery he had recently visited at the entrance of Matlacha Pass, where there were many of these birds, and some in the white phase. He also said he had hunted the entire coast, and that below Marko Pass, the colored phase of the Reddish Egret became uncommon, while the white phase began to be more numerous, and that the form found in the rookeries of the Thousand Islands was the white phase, which is there quite plenty; he had never seen a colored bird there or south of there. I have this same information from a number of independent sources and consider it reliable. A word further as to the range to the northward on the Gulf Coast of the Reddish

Egret (*A. rufa*). I have not met with it at all north of the mouth of the Anclote River, at which point it is rare. In all the rookeries about Tampa, Old Tampa, and Hillsboro' Bays, it is more or less common, but its representatives are almost entirely in the colored phase, and only now and then, at rare intervals, is a white bird (*A. pealei*) met with.

(To be continued.)

SUPPLEMENTARY NOTES ON THE GENUS ACANTHIS.

BY LEONHARD STEJNEGER.

THE well-known Austrian ornithologist, Victor, Ritter von Tschusi zu Schmidhoffen, has most courteously sent me four specimens of *Acanthis cabaret* from Austria, thus enabling me to supplement my former paper (Auk, 1887, p. 31) on the subject with a few notes.

I stated that from the examination of an Italian specimen I was "strongly inclined to think that it will be necessary ultimately to recognize *A. rufescens* (Vieill.) as different from *A. cabaret*." The Italian specimen, as compared with British birds, differed chiefly (1) in being of a brighter and more ochraceous brown; (2) in having whitish (not pale umber brown) outer margins to the tail-feathers; (3) in having the flanks more heavily streaked; (4) in having dusky streaks across the fore neck, and (5) in having a decidedly smaller bill.

The four Austrian birds show conclusively that the above characters will not hold as distinguishing continental specimens from British ones. They are practically identical with typical British *A. cabaret*, and can be matched completely, and I have British specimens of *A. cabaret* before me which are considerably brighter in general coloration, and have the flanks more heavily streaked than the Austrian examples, none of which exhibit any dusky streaks across the fore neck. Of the latter two have whitish outer margins to the tail-feathers, while in the other two they are brownish, and as to the size of the bill, the table below de-

monstrates that the Austrian specimens have the bills larger, if anything, than the average British bird. (Compare tables in Auk, 1887, pp. 34, 35.) This table also shows how closely Austrian and British examples agree in general size.

It is hardly probable that the form inhabiting the mountains of Italy should be different from that breeding in the Austrian Alps, and I therefore now regard *A. rufescens* as a true synonym of *A. cabaret*.

MEASUREMENTS.

Sex and Age.	LOCALITY.	DATE.	Wing.	Tail-f.	Bill from Nostrils.	Furcation of Tail.
♂ ad.*	Hallein, Salzburg, Austria	Nov. 15, 1883.	71	53	7.5	10
♂ †	“ “ “	Oct. 21, 1883.	70	52	7.2	10
♂ †	Mariahoff, Steiermark, Austria	Feb. 24, 1881.	71	54	7.5	12
♂ †	Hallein, Salzburg.	Oct. 21, 1883.	67	49	7.0	11
	Average measurements of three males . . . . .	. . . . .	71	53	7.4	11

* Throat and breast red.

† Without red.

THREE NEW FORMS OF NORTH AMERICAN BIRDS.

BY WILLIAM BREWSTER.

MR. J. M. SOUTHWICK, of Providence, has called my attention to the fact that western specimens of the Willet differ in size, color, and markings from those of the Atlantic coast. Upon testing these differences by a fairly large series I find the birds of the two regions apparently distinct, at least subspecifically. The western form may be characterized as follows:

Symphemia semipalmata inornata, subsp. nov.—WESTERN WILLET.

SUBSP. CHAR. *Male and Female, breeding plumage*:—Differing from *S. semipalmata* in being larger, with a longer, slenderer bill; the dark markings above fewer, finer, and fainter, on a much paler (grayish-drab) ground; those beneath duller, more confused or broken, and bordered by pinkish-salmon, which often spreads over or suffuses the entire underparts, excepting the abdomen. Middle tail-feathers either quite immaculate or very faintly barred.

Measurements: Eight specimens from Larimer County, Colorado, and two from Moody County, Dakota; all adults taken in May or June; average: Wing, 8.11; tail, 3.29; tarsus, 2.66; culmen from feathers, 2.46. The same birds give the following extremes: Wing, 7.88-8.26; tail, 3.10-3.50; tarsus, 2.45-2.95; culmen from feathers, 2.28-2.70.*

Types, No. 13,529, ♂ ad., Larimer County, Colorado, May 14, 1886; No. 13,530, ♀ ad., Larimer County, Colorado, May 5, 1885; both in my collection.

Habitat. Interior of North America between the Mississippi and the Rocky Mountains, wintering along the coasts of the Gulf and Southern Atlantic States (Florida, Georgia, South Carolina).

S. semipalmata typica is brownish-olive, above confusedly and densely barred, streaked, or spotted with blackish, this giving the prevailing tone to the plumage. The bars beneath are usually coarse, dark, regular, and seldom bordered with pinkish or salmon. The central tail-feathers are almost invariably crossed by three or four distinct and continuous blackish bars. The two birds do not seem to differ in respect to the white on the wings or upper tail-coverts.

Among the breeding (May and June) specimens before me the differences just pointed out are nearly constant, and so pronounced that they may be seen at a glance. They are less striking in some examples taken in early spring (March and April) in South Carolina, Georgia, and Florida, several of which seem to be fair intermediates, although they may be eastern birds which have not perfected the nuptial plumage. I have a few specimens (winter and early spring) from Georgia and the Carolinas which are apparently true *inornata*.

In the plain gray and white winter dress the two forms appear to be distinguishable only by size. Unfortunately, this difference is not absolutely reliable as the above measurements show. Rather curiously, the young, from whatever locality, seem to be larger than the old birds.

Touching briefly on synonymy it appears:

(1) That the *Scolopax semipalmata* of Gmelin (Sys. Nat., I, 1788, 659) was based on the eastern bird.

(2) That *Totanus crassirostris* Vieillot (Nouv. Dict. d'Hist. Nat., 1816, 406) was founded on a specimen (from Louisiana)

* An equal number of adult eastern birds, four from Georgia, five from Northampton County, Virginia, and one from Warwick, Rhode Island, average: Wing, 7.36; tail, 2.91; tarsus, 2.29; culmen from feathers, 2.19. Extremes: Wing, 7.06-7.75; tail, 2.71-3.30; tarsus, 2.08-2.42; culmen from feathers, 2.02-2.31.

in winter plumage, in which condition, as just stated, the two forms are not certainly separable.

(3) That *Symphemia atlantica* Rafinesque (Journ. Phys., LXXXVIII, 1819, 417) is a *nomen nudum*.

(4) That *Totanus speculiferus* Cuvier (R. A., I, 1817, 351) and Pucheran (R. et M. Z., III, 1851, 569) is not now determinable.

It follows that none of these names are available for the Western Willet, although it is not improbable that at least two of them (*crassirostris* Vieill. and *speculiferus* Cuv.) were originally applied to it.

Most of our recent authorities describe both forms under *S. semipalmata*, confusing them and attributing their differences to age, season, or individual variations.

I am indebted to Mr. Southwick for most of the specimens on which the above comparisons are based, as well as for permission to announce what is really his discovery rather than my own.

***Phalænoptilus nuttalli nitidus*, subsp. nov. — FROSTED POOR-WILL.**

SUBSP. CHAR.—Similar to true *P. nuttalli*, but with the dark markings of the crown, back, etc., fewer and more sharply defined on a much lighter ground, the transverse bars beneath finer, paler, and less conspicuous.

Habitat. Texas and Arizona.

Types, Nos. 13076, ♂ ad., and 13077, ♀ ad., Nueces River, Texas, Feb. 27, 1886; F. B. Armstrong; both in my collection.

This bird seems to be another example of a 'bleached desert race.' It is very much paler than true *nuttalli*, with fewer, finer dark markings, which, however, are more conspicuous than in *nuttalli*, owing to the generally lighter ground color. This on the forehead, sides of crown, rump, upper tail-coverts, and scapulars is pearly or ashy white, giving the parts a delicate frosted appearance. The chin, sides of head, and a broad band around the nape are light faded brown, whereas in *nuttalli* they are many shades darker and (the chin and cheeks at least) often strongly blackish. That Audubon described and figured the darker bird is open to no doubt.

Texas specimens show little variation, several taken in February on the Nueces River being practically identical with a breeding female shot at Rio Grande City in June (No. 977, Coll. of

George B. Sennett). Arizona apparently furnishes both forms for a specimen from the Catalina Mts. (♂ , No. 2177, Coll. W. E. D. Scott, April 19, 1885) is typical *nitidus*, while six others from the same locality are referable to *nuttalli*. The latter, however, do not average as dark as examples from further north. California birds are usually, but by no means invariably, the deepest-colored of all. It is not impossible that both *nuttalli* and *nitidus* breed in Arizona at different elevations, or one of them (*nitidus*) may occur only as a migrant. The evidence at hand seems to favor the latter view.

In Baird, Brewer, and Ridgway's Land Birds (Vol. II, page 417) the female Poor-will is described as "without the white tip of tail." This is obviously an error, for not one of the twelve females before me lacks the white, although in several it is more or less tinged with buff, and is, perhaps, also usually narrower than in the male.

The material examined in the above connection includes the entire series of the National, American (of New York), and Cambridge Museums, besides those of several private collections, the whole aggregating forty-one specimens—five from Texas, two from New Mexico, sixteen from Arizona, two from Colorado, five from Utah, four from Montana, one from Nevada, and six from California.

Vireo noveboracensis maynardi, subsp. nov.—KEY WEST VIREO.

SUBSP. CHAR. — In size and proportions similar to *V. crassirostris*, the bill equally large and stout. Coloring more like that of *V. noveboracensis* but grayer above, the yellow beneath paler (but of the same greenish or lemon tinge) and equally, if not more, restricted.

Wing, 2.20–2.53; tail, 1.90–2.07; tarsus, .70–.79; culmen from base, .55–.65; do. from feathers, .42–.50; do. from nostril, .30–.35; depth of bill at nostril, .18–.20

Habitat. Key West, Florida.

Types, Nos. 108,860, ♂ ad., Key West, Fla., March 29, 1886, Str. Albatross; 108,862, ♀ ad., Key West, March 29, 1886, Str. Albatross; both in collection of National Museum.

In general terms this bird may be said to combine the structural peculiarities of *V. crassirostris* with the coloring of *V. noveboracensis*. It has the long, stout bill of the former, the yellow beneath greenish instead of brownish, and essentially

confined to the sides as in the latter. That it is a connecting link between the two is evident, for several of the Key West specimens unmistakably approach *crassirostris*, while others vary in the direction of *noveboracensis*. With the latter, indeed, the large series before me* establishes a perfect intergradation. This seems to be effected within a narrow latitudinal belt, all my specimens from Northern Florida being essentially similar to those from the United States at large, the intermediates coming from Miami and the keys between that point and Key West. A bird from Cozumel Island is apparently typical *noveboracensis*, while two Bermuda specimens show only slight, and perhaps accidental, peculiarities.

Several of the Key West examples used in the above comparison were collected by Mr. C. J. Maynard, to whom the new bird is dedicated.

RECENT LITERATURE.

Sclater's Catalogue of the Cœrebidæ, Tanagridæ, and Icteridæ.—In the eleventh volume of the British Museum Catalogue of Birds† Dr. P. L. Sclater treats the three strictly American families Cœrebidæ, Tanagridæ, and Icteridæ—groups to which, as is well known, he has for many years given special attention. Of the family Cœrebidæ (Guit-guits, or Honey Creepers), 70 species are recognized, of which 63 are represented in the collection of the British Museum by 672 specimens. The members of this family are of small size, mostly of brilliant color; some are closely related to the Mniotiltidæ, from which they may, however, be distinguished by “the more slender unnotched bill and filamentous termination of the extensible tongue”; others are with difficulty separable from the Tanagridæ.

Of the great group Tanagridæ 377 species are admitted, all but 20 of which are represented in the British Museum Collection by 3413 specimens. Thirty-three species are referred to the genus *Euphonia*, 61 to the genus *Calliste*, 32 to *Chlorospingus*, and 35 to *Buarremon*. The total number of genera is 59.

* About one hundred and fifty specimens, chiefly from the collections of the National and Cambridge Museums.

† Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum. Fringilliformes: Part II, containing the families Cœrebidæ, Tanagridæ, and Icteridæ. By Philip Lutley Sclater. London: Printed by order of the Trustees. 1886. 8vo, pp. xviii, 431, pll. xviii.

Of the Icteridæ 128 species are accepted, 125 of which are represented in the British Museum by an aggregate of 1409 specimens. The whole number of species treated in the volume is therefore 545, represented by 5494 species. Means so ample, in the hands of a specialist so thoroughly competent for the task, cannot fail to give most satisfactory results.

The position of the Icteridæ next to the Tanagridæ, necessitated by the scheme of classification adopted by Mr. Sharpe for the Oscines, does not meet with Mr. Sclater's full approval, who considers the Tanagridæ as very closely allied to the Fringillidæ, and as being in fact "fruit and insect-eating Finches." The Icteridæ, he believes, would be better placed after the Fringillidæ, in the immediate neighborhood of the Sturnidæ.

Although subspecies are freely admitted, the system of nomenclature conforms to that of the previous volumes of the 'Catalogue.' The treatment of specific and subspecific forms is, in general, decidedly conservative; if, however, the author had followed, in certain instances, his own expressed convictions in place of deferring to the opinion of some previous author, the results would, we believe, have been more satisfactory.

Two species (*Arremon nigrivostris* and *Agelaius forbesi*) and three genera (*Pseudoducnis*, *Delothraupis*, and *Gymnostinops*) are indicated as new. Twenty-three species are figured.

The families here treated could not have fallen into better hands. The authorities of the British Museum are to be congratulated on having secured the assistance of Mr. Sclater for this work; and we are sure ornithologists will be rejoiced to learn that another volume of this invaluable series will be prepared by the same distinguished authority on American birds. —J. A. A.

Conclusion of the Great Work on the Nests and Eggs of the Birds of Ohio.* For several years we have noted the progress of this undertak-

* *Collation:*

19 covertitles: Part [1-23 (msc.)] | Price \$5, [later omitted] | Illustrations | of the | Nests and Eggs | of the | Birds of Ohio | with Text | by | Genevieve E. Jones and Eliza J. Shulze [names later omitted.] | Circleville, Ohio | 1879 [Dates omitted after Part 5] Copyrighted by Genevieve E. Jones and Eliza J. Shulze | [Dates, Stamped or Msc.]

Illustrations | of the | Nests and Eggs | of | Birds of Ohio | with Text. | Illustrations by | Mrs. N. E. Jones | Text by | Howard Jones, A.M., M.D. | Circleville, Ohio, U. S. A. | [1879 to] 1886. | Folio. | Text. in loose sheets; pl. plain lithog. or hand-col'd; pub. in 23 Parts. | Text, pp. i-xxxviii, xxxviii a-d, 41-329. | Plates i-lxviii.

Part 1, July, 1879 [there was a trial or specimen part pub. Dec. 1878] pp. 41-46, pl. i-iii. Part 2, Oct. 1879, pp. 47-54, pl. iv-vi. Part 3, Jan., 1880, pp. 55-58, pl. vii-ix. Part 4, April, 1880, pp. 59-66, pl. x-xii. Part 5, July, 1880, pp. 67-70, pl. xiii-xv. Part 6, Oct., 1880, pp. 71-82, pl. xvi-xviii. Part 7, Jan., 1881, pp. 83-90, pl. xix-xxi. Part 8, April, 1881, pp. 91-98, pl. xxii-xxiv. Part 9, July, 1881, pp. 99-106, pl. xxv-xxvii. Parts 10, 11 (Double No.), pp. 107-118, pl. xviii-xxxiii ("Oct., 1881" to) Jan., 1882. Part 12, Apr., 1882, pp. 119-122, pl. xxxiv-xxxvi. Part 13, July, 1882, pp. 123-138, pl. xxxvii-xxxix. Parts 14, 15 (Double No.), pp. 139-154, pl. xl-xlv ("Oct., 1882" to) Jan., 1883. Part 16, Apr., 1883, pp. 155-166, pl. xlvi-xlviii. Parts 17, 18 (Double No.), pp. 167-190, pl. xlix-liv ("July 16") Oct., 1883. Part 19, Jan., 1884, pp. 191-206, pl. lv-lvii. Part 20,

ing in the pages of the 'Nuttall Bulletin' and of 'The Auk.' It now gives us real pleasure to record the completion of so meritorious and important a publication, pushed with every painstaking through a period of eight years to a successful termination. Circumstances have been against the authors in more ways than one, which one alone would have led most persons to abandon the project. But they have steadily persevered, and the result is one which will take its place among the most original and most notable treatises on ornithology which have appeared in this country. It might be going too far to say that the work does for caliology and oölogy what Audubon's did for its own subject; but if the drawings and writings of the latter had been confined to the birds of a single State, the comparison would hold. Several treatises on eggs and nests, more or less ambitious, have been essayed, but they have all broken down, though mostly projected under more favorable circumstances than this one. With little encouragement from high sources, with less assistance still, and with no adequate pecuniary support, it required courage, patience, and enthusiastic devotion to a purpose to accomplish such a result—circumstances which, in these days of that easy book-making which results in such hard book-reading, carry us in mind back to Alexander Wilson's appearance before the public with the first two volumes of 'American Ornithology' under his arm.

The work is simply admirable. Its cost may place it beyond the reach of many working ornithologists, but it should be found in our principal libraries, as we have no doubt that it will. In Ohio, at any rate, it should not be beneath the notice of the Legislature, with reference to those educational institutions which are under legislative jurisdiction.

Upwards of one hundred species of eggs are figured in colors by hand, usually with several specimens of each, showing the variations in size, shape and markings. Their average excellence—for they vary somewhat—has not been equalled in this country, and they are surpassed only by the best productions of foreign artists. No such series of the figures of nests has ever appeared anywhere. Nests are often introduced as accessories of figures of birds, as they were, notably, by Audubon, and many very pretty and effective woodcuts of these objects are extant. But these are a larger collection than have appeared together before; they are life-sized and life-colored—if such expressions be permitted, and many of them are introduced with their accessories. In some cases the eggs rest in the nest, and the whole effect is singularly true to nature. There is room for criticism, as where is there not? But we imagine few critics would speak,

Apr., 1885, pp. 207-234, pll. lviii-lx. Parts 21, 22 (Double No.), pp. 235-286, pll. lxi-lxvi ("July to") Oct., 1886. Part 23, Dec., 1886, pp. i-xxxviii, xxxviii-a-d, 287-320, pll. lxvii-lxviii.

Title, etc., pub. with Part 23. Title, p. i; Dedication, p. iii; Preface, pp. v-viii; Introductory, pp. ix-xxxiii, including Lists of Ohio Birds; Key to the Eggs of the Summer Residents of Ohio, pp. xxxiv-xxxviii, xxxviii a-d; Main Text pp. 41-314; Etymological Key, pp. 315-320; Names of Subscribers, pp. 321-322; Index to Illustrations, pp. 323, 324; General Index, pp. 325-329.

if the condition of their being heard were, that they should be able to do as well themselves.

The text is very original, resting almost entirely upon the personal observations of the authors. It has no literary merit, unless directness and clearness be such. It resists the usual temptation to prepare full biographies of the birds, confining itself strictly to the subject in hand. Each article opens with general statements regarding the bird in its Ohio aspects, continuing with the 'locality,' 'position' and 'materials' of the nest, descriptions of the 'eggs,' 'differential points' of the same, and concluding remarks at large. The text is almost entirely from the pen of Dr. Howard E. Jones, and the plates have in nearly every instance been drawn from fresh material collected by this author, mainly in the vicinity of Circleville. The project was initiated by Miss Genevieve Estelle Jones and Miss Eliza J. Shulze, who determined in 1877 to make a series of colored plates. The sad death of the former young lady, August 17, 1879, and the withdrawal of Miss Shulze in April, 1880, threw the work upon the hands of the Jones family. Dr. N. E. Jones assumed the expense of the work, Mrs. N. E. Jones proceeded with the plates, Dr. Howard Jones (brother of Miss Genevieve) undertook the text as already said, and subsequently Miss Nellie D. Jacob of Circleville, Miss Josephine Kippart of Columbus, and Miss Kate Gephart, of Circleville, were engaged to assist Mrs. Jones in the coloring. Had the result been but a measured success instead of a remarkable accomplishment, great credit would have been due to all concerned.

The Introductory is a general sketch of the Birds of Ohio. It appears that of summer residents there are 129; of permanent residents, 41; probable residents and summer residents, 42. This category is followed by a systematic, annotated list, copied from Dr. J. M. Wheaton's work, noting 292 species known to occur in the State.

A quite original and peculiar 'Key to the Eggs' follows. The eggs are found to be groupable by color in the following manner: I. Eggs plain. A, white or whitish; 22 spp. B, blue or bluish, green or greenish; 17 spp. C, some other plain color as buff, etc.; 5 spp. II. Eggs marked. A, B, C, as before, as to ground color; A, 56 spp.; B, 20 spp.; C, 25 spp. And in every case in this remarkable set of tables, the eggs are not only thus classified, but described concisely, with measurements of length and breadth, the linear arrangement in each group being according to size. It is a very pretty and effectual piece of work.

Among appendicular matters is an 'Etymological Key,' in which Rev. S. H. McMullin undertakes to give the English equivalents of all the Latin and Greek names of the birds, and offers quite as much ornithophilologicality as the average bird-lover may require.—E. C.

Ridgway's Nomenclature of Colors and Ornithologists' Compendium.*

*A | Nomenclature of Colors | for Naturalists, | and | Compendium of Useful Knowledge | for Ornithologists. | By | Robert Ridgway, | Curator of Birds, United States National Museum. | With ten colored plates and seven plates | of outline illustrations Boston: | Little, Brown, and Company. 1886. 8vo., pp. 129, pl. i-xviii, faced by explanatory leaves.

—Mr. Ridgway's little manual will doubtless prove of great utility, and should meet with a hearty welcome. It consists of two parts. Of Part I, 'Nomenclature of Colors,' some twenty pages are devoted to 'Principles of Color,' and consist largely of directions as to the selection of pigments and their combination to form certain desired tints. This is followed by a 'Comparative Vocabulary of Colors,' giving the equivalent names in English, Latin, German, French, Spanish, Italian, Norwegian, and Danish, occupying nearly twenty pages more. Two pages of 'Bibliography' complete Part I, which is illustrated by ten hand-colored plates.

Part II is entitled 'Ornithologists' Compendium,' and is made up largely of a 'Glossary of Technical Terms used in Descriptive Ornithology,' which occupies nearly one-half of the book; it is illustrated by six plates of outline figures, three of which are devoted to the 'topography' or 'external anatomy' of a bird, two to various forms of color-marks on feathers, and one to egg-contours. Another plate gives a comparative scale of measurement standards, as the English inch, the French inch (*pied du roi*), and millimetres.

Part II closes with a table showing "the equivalents in English inches, and decimals thereof, of every tenth of a millimetre, from 1.0 to 100.9," and another "for converting English inches and decimals into millimetres." The author acknowledges his indebtedness to Dr. Leonhard Stejneger not only for suggesting these useful tables but for their preparation, and for aid in compiling the comparative color-vocabulary.

In Part I of the present work Mr. Ridgway has attempted a difficult task, requiring much research, a nice display of judgment, and other qualifications which only experience and skill as a colorist, combined with critical knowledge of the requirements of descriptive ornithology, could give. The details of the subject afford much latitude for a diversity of opinion; and whatever the results attained, they would be more or less subject to adverse criticism, especially in regard to the proper designation of particular shades of color. "Undoubtedly," as the author says, "one of the chief desiderata of naturalists, both professional and amateur, is a means of identifying the various shades of colors named in descriptions, and of being able to determine exactly what name to apply to a particular tint which it is desired to designate in an original description." There being no modern work of this character extant, Mr. Ridgway has very laudably attempted to supply the want. While he has supplied a standard for color nomenclature—and so far as we can see an excellent one—it fails by far, from the nature of the subject, to clear away all the difficulties, since the names of colors in current use are in many cases both vague and variable. The general adoption by future describers of the standard here set would do much to improve matters, and would give a uniform basis for color-nomenclature; but it would be, unfortunately, highly unsafe to attempt to make the standard retroactive, and interpret by it the color descriptions of the already existing literature. But this is no fault of the present author or his system; and his work as a whole cannot fail to be extremely useful. Part II must prove especially welcome to all beginners in ornithology, to whom, however, its usefulness will be by no means limited.—J. A. A.

Bryant on the Ornithology of Guadalupe Island.—In December, 1885, Mr. Bryant visited Guadalupe Island, and the results of his three and a half months' work there is given in a paper* of 50 pages, published in the 'Bulletin' of the California Academy of Sciences. The only previous exploration of the island in the interest of ornithology was made by Dr. Edward Palmer, in 1875, who obtained 72 specimens of birds, representing nine species, eight of them being land birds and new to science. To this list Mr. Bryant added 27 species, raising the total number now known from the island to 36. All but four of the species are land birds, and eight of them are peculiar to the island. Mr. Bryant's paper opens with a detailed account of the topography, climate, and vegetation of the island, which is followed by a copiously annotated list of the species, consisting of biographical notes of much interest, including descriptions of the nests and eggs of most of the resident species, of which nothing was previously known. Good series of specimens were obtained of most of the species met with, measurements of which are also included.

Although Dr. Palmer seems to have harvested the 'first fruits' (Mr. Bryant failing to obtain any species new to science), Mr. Bryant's paper admirably supplements Mr. Ridgway's papers on the bird fauna of the island, based on Dr. Palmer's collections, and forms a highly important contribution to the subject, leaving apparently little to be added by future explorers.—J. A. A.

Ralph and Bagg on the Birds of Oneida County, N. Y.—The 'Annotated List of the Birds of Oneida County, N. Y., and its immediate vicinity,' † by Dr. William L. Ralph and Mr. Egbert Bagg, though not "put forth as complete," is based on the observations of several years, and appears to have been compiled in a thoroughly scientific spirit and with due care, the authority being stated for such data as are not given on their personal knowledge. A few species have been included from having been found in neighboring counties, for which there is as yet no positive record for the county in question, but they are duly distinguished in the annotations, and are covered by the title in the phrase "its immediate vicinity." Many valuable observations are accredited to Dr. C. Hart Merriam (now of Washington, D. C.), and Messrs. A. L. Brainard and A. A. Howlet, of Syracuse. The List numbers 224 species.—J. A. A.

Platt on the Birds of Meriden, Conn.—Mr. Platt's List‡ appears to have strict reference to the town limits of Meriden, Conn., and to be based almost wholly on the author's personal observations. It is briefly annotated and numbers 116 species. The list is very attractively printed, and seems thoroughly trustworthy, so far as it goes, but is obviously in-

* Additions to the Ornithology of Guadalupe Island. By Walter E. Bryant. Bull. California Acad. Sciences, No. 6, pp. 269-318. ("Issued Jan. 5, 1887.")

† Trans. of the Oneida Hist. Soc., Vol. III, pp. 101-147, 1886.

‡ A List of the Birds of Meriden, Conn. By Franklin Platt. Trans. of the Meriden Scientific Assoc., Meriden, Conn., Vol. II, 1885-86, (Feb. 1887), pp. 30-53.

complete. The author has wisely, however, confined his list to the species positively known to occur.—J. A. A.

Maynard on 'Five New Species of Birds from the Bahamas.'—In a paper entitled 'Corrected Descriptions of Five New Species of Birds from the Bahamas,' published in an obscure trade journal,* Mr. C. J. Maynard has briefly characterized "provisionally, in advance of my [his] work on illustrations and notes of Birds of the Bahamas," the following species as new: *Pandion ridgwayi*, *Rallus coryi*, *Chamæpelia bahamensis*, *Ammodramus australis*, *Geothlypis restricta*. The *Ammodramus australis* is said to be "Rare in the Bahamas, but constantly resident in Florida." Most of the species are closely allied to well-known continental forms, to which they have been hitherto, and probably will be in future, commonly referred. But whatever their fate, Mr. Maynard most unwisely chose his medium for their publication, and was most unfortunate in the treatment his original article, published in a previous issue of the paper in question, received at the hands of the printer, it being so full of misprints, particularly in the scientific names, as to necessitate its republication in a corrected form; hence the title, as above cited. Mr. Maynard, not feeling sure that *Columba passerina* of Linnæus was not based on Bahama specimens rather than on examples from the main land, has taken the precaution to "propose the name of *Chamæpelia purpurea* for the larger continental dove"—J. A. A.

Shufeldt's Contributions to Science.†—Dr. Shufeldt has recently published an annotated list of his scientific papers, numbering 123 titles. They embrace a wide range of topics, though mainly ornithological, and indicate great industry and intellectual activity on the part of their author. The list forms an exceptionally neat and well-printed pamphlet of twenty pages.—J. A. A.

Stejneger 'On the Status of *Synthliboramphus wumizusume* as a North American Bird.' Under this title‡ Dr Stejneger affirms that the only specimens extant of this species from North American localities prove to be immature or winter examples of *S. antiquus*. He therefore believes that "Until authenticated and undoubted American specimens are found, it may be expedient to remove *Synthliboramphus wumizusume* to the 'Hypothetical List' (A. O. U. Check List, p. 347). It is a case in many respects completely parallel to that of *Cepphus carbo*."—J. A. A.

* The American Exchange and Mart and Household Journal, Vol. III, No. 6, Feb. 5, 1887, p. 69. (Boston and New York.)

† 1881-1887. | — | Contributions to Science | and | Bibliographical Résumé | of the Writings | of | R. W. Shufeldt, M. D., | Captain; Medical Department, U. S. Army | [=9 lines, titles]. | — | By their Author. | — | — | Press of L. S. Foster, New York. | 1887. 8vo, pp. 20.

‡ Proc. U. S. Nat. Mus., 1886, p. 524.

Ridgway on New Species of American Birds, etc.—A species of *Myiarchus** supposed to be from the Orinoco district of South America, is described as *Myiarchus coalei*. It is said to most resemble *M. nigriceps* ScL., and is from the collection of Mr. H. K. Coale. A new species of *Picolaptes* (*P. rikeri*) is described† from near Santarem, Lower Amazon, where it was recently collected by Mr. C. B. Riker. A new subspecies of *Cyclorhis* (*C. flaviventris yucatanensis*) is described‡ from three specimens taken in Yucatan.

Mr. Ridgway has also described a new Plumed Partridge from Sonora,§ under the name *Callipepla elegans bensoni*, based on five specimens taken by Lieut. H. C. Benson, U. S. A., in Sonora. Mr. Ridgway has also recorded a Woodpecker|| supposed to be a hybrid between Nuttall's Woodpecker and Gairdner's Woodpecker, which in "every feature of size, form, and coloration" is exactly intermediate between these two species.—J. A. A.

Publications Received.—Berlepsch, Hans von. (1) On some interesting additions to the Avifauna of Bucaramanga, U. S. of Columbia. (Ibis, 1886, pp. 53-57, pl. iv.) (2) Kritische Bemerkungen zur Colibri-Literatur. (Separat. aus der Festschrift der Ver. für Naturk. zu Cassel. 1886.)

Berlepsch, Hans von, und Dr. Herman von Jhoring. Die Vögel der Umgegend von Taquara do Mundo Novo, Prov. Rio Grande do Sul. (Separat. aus der Zeitsch. für gesammte Orn., 1885.)

Blasius, R. (1) Ueber den Wanderzug des Tannhebers (*Nucifraga caryocatactes* L.) im Herbst 1885. (Braunschweigische Anzeigen, No. 164, 16 Juli, 1886.) (2) Der Dompfaff Brutvogel bei Braunschweig; Der diesjährige Wanderzug der Sperbereule (*Surnia nisoria* Wolf); Brutplätze des Alpengleglers (*Cypselus melba* L.). (Ibid., No. 305, 30 Dec., 1886.)

Bryant, Walter E. Additions to the Ornithology of Guadalupe Island. (Extr. Bull. No. 6, California Acad. Sci., Jan. 5, 1887.)

Carpenter, Frederic H. The occurrence of the Osprey in the Fauna of Bristol County, Mass. (Publ. Bristol Co. Orn. Club, No. 2, 1887.)

Dubois, Alph. Compte rendu des observations ornithologiques faites en Belgique pendant l'année 1885. (Extr. Bull. du Mus. roy. d'Hist. Nat. de Belgique, IV, 1886.)

Maynard, C. J. Corrected descriptions of five new species of Birds from the Bahamas. (Amer. Exch. and Mart. III, No. 6, p. 69, Feb. 5, 1887.)

Pelzeln, August von, und Dr. Ludwig von Lorenz. Typen der ornithol-

* Description of a new species of *Myiarchus*, presumably from the Orinoco District of South America. By Robert Ridgway. Proc. U. S. Nat. Mus., 1886, p. 521.

† Description of a new species of *Picolaptes* from the Lower Amazon. Ibid., p. 523.

‡ Description of a new Subspecies of *Cyclorhis* from Yucatan. Ibid., p. 519.

§ Description of a new Plumed Partridge from Sonora (*Callipepla elegans bensoni*), Forest and Stream, Vol. XXVIII, No. 6, March 3, 1887, p. 106.

|| On a probable Hybrid between *Dryobates nuttalli* (Gamb.) and *D. pubescens gairdnerii* (Aud.). Proc. U. S. Nat. Mus., 1886, pp. 521, 522.

ogischen Sammlung des k. k. naturhistorischen Hofmuseums, Wien. (Extr. Ann. des k. k. Naturhist. Hofmuseums, I, 1886.)

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Ralph, Wm. L., and Egbert Bagg. Annotated list of the Birds of Oneida County, N. Y., and its immediate vicinity. (Trans. Oneida Hist. Soc., III, 1886, pp. 101-147.)

Ridgway, Robert. (1) Nomenclature of Colors for Naturalists, and Compendium of Useful Knowledge for Ornithologists. 8vo. Boston: Little, Brown, and Company, 1886. (2) Descriptions of an apparently new Species of Picolaptes, from the Lower Amazon. (Proc. U. S. Nat. Mus., 1886, p. 523.)

Salvadori, Tommaso. Elenco degli Uccelli Italiani. (Ann. Mus. Civ. di Stor. Nat. di Genova, Ser. 2, Vol. III, 1887.)

Shufeldt, R. W. Contributions to Science and Bibliographical Résumé of the Writings of R. W. Shufeldt, M.D., etc., 1881-1887. 8vo. pp. 20. L. S. Foster, New York, 1887.

Stejneger, L. (1) On *Turdus alpestris* and *Turdus torquatus*, two distinct species of European Thrushes. (Proc. U. S. Nat. Mus., 1886, pp. 365-373.) (2) Review of Japanese Birds, Part II, Tits and Nuthatches. Part III, Rails, Gallinules and Coots. (Ibid., pp. 374-408.) (3) Notes on species of the Australian Genus *Pardalotus*. (Ibid., pp. 294-296.) (4) Description of *Rallus jouyi*, with Remarks on *Rallus striatus* and *Rallus gularis*. (Ibid., pp. 362-364.) (5) The British Marsh-Tit. (Ibid., pp. 200, 201.) (6) On the Status of *Synthliboramphus wumizusume*. (Ibid., p. 524.) (7) On a Collection of Birds made by Mr. M. Namize, in the Liu Kiu Islands, Japan, with descriptions of New Species. (Ibid., pp. 634-651.)

Swinburne, Spearman. Notes on Birds observed on Voyages between England and the Cape of Good Hope. Communicated by J. J. Dalglish. (Proc. Roy. Phys. Soc. Edinburgh, IX, 1885-86, pp. 193-201.)

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 Proceedings Acad. Nat. Sci. Philadelphia, pt. 3, Oct.-Dec., 1886.
 Proceedings U. S. Nat. Mus., 1886, pp. 289-624.
 Zoologist, XI, Nos. 121-123, Jan.-March, 1887.

GENERAL NOTES.

The Common Murre (*Uria troille*) and the Razor-billed Auk (*Alca torda*) on the New England Coast.—Among some birds received by Mr. F. B. Webster from a gunner at Eastport, Maine, December 27, 1886, I found three Murres. They were in the flesh and evidently had been dead only a few days. With them were sent one Brünnich's Murre (*Uria lomvia*), and no less than twenty Razor-billed Auks. The latter occurred in great numbers at various points between Eastport, Maine, and Provincetown, Mass., during November and December, 1886; ordinarily they are not common. The Brünnich's Murre, usually an abundant visitor in the late autumn, has been apparently nearly wanting the past season.—WILLIAM BREWSTER, *Cambridge, Mass.*

Capture of the Razor-billed Auk at Norfolk, Virginia.—By request of Dr. A. K. Fisher I send to 'The Auk' the following note recording the capture of the Razor-billed Auk (*Alca torda*) in the vicinity of Norfolk, Virginia. I am not able to state by whom it was shot, nor the date, but it was about the 15th of October. The bird was a male, in fine plumage and good condition. This, I believe, is the first one taken so far south.—FREDERICK S. WEBSTER, *Washington, D. C.*

Megalestris skua.—In 'The Auk,' Vol. III, No. 4, Oct., 1886, p. 432, I recorded what I supposed to be the third occurrence of this species in North America. A previous record of two seen on Nantucket Shoals, Oct. 11, 1883, may be found in 'Notes on the Habits and Methods of Capture of Various Species of Sea Birds that occur on the Fishing Banks off the Eastern Coast of North America, and which are used for bait for catching Codfish by New England Fishermen,' by Capt. J. W. Collins (pp. 13 and 14, of separate, extracted from the Annual Report of the Commissioner of Fish and Fisheries for 1882, pp. 323 and 324).—WILLIAM DUTCHER, *New York City.*

More News of *Ardea wuerdemanni*.—I have lately received from Mr. R. X. Stuart, of Tampa, Florida, four specimens of *A. wuerdemanni*, which were taken on the small island southwest of Cape Sable, Florida. Mr. Stuart writes me he procured six examples of this rare bird, as well as a fine series of *Ardea occidentalis*, which he found breeding in December, and obtained many eggs. Several sets of eggs of *Haliaeetus leucocephalus* were taken in the same locality.—CHARLES B. CORY, *Boston, Mass.*

***Ardea egretta* in Niagara County, N. Y.**—In April, 1884, I reported to the 'Forest and Stream' the capture of three birds of this species in the adjoining county of Orleans, on Nov. 28, 1883. At that time I little expected that I would ever have an opportunity to mention its occurrence nearer home. But on the 18th of last August two specimens were brought to me, by different persons, for identification, both taken in the town of Newfane, this county, near the village of Olcott, on Lake Ontario. I did not have an opportunity to learn the sex, but took the measurements of one of them: Length, 36½ inches; wing, 15½; tarsus, 6.—J. L. DAVISON, *Lockport, Niagara County, N. Y.*

Further Notes on the Masked Bob-white (*Colinus ridgwayi*).—Mr. J. C. Cahoon, who is at present collecting in Northern Mexico, has just sent me ten specimens of the Masked Bob-white, taken February 5-8, 1887, in the province of Sonora, about fifty miles south of the United States boundary.

The eight males included in this series show an even greater range of variation than the ten birds of the same sex so carefully described* by Mr. Allen. Two agree closely with the male figured in Mr. Allen's plate, having similarly solid black foreheads and throats, and plain, rich cinnamon underparts relieved by only a few markings of black or white on the crissum and under tail-coverts. Both show traces of a white superciliary stripe, which in one extends forward to the front border of the eye, in the other to within about a quarter of an inch of the nostril.

The remaining six males have the mask and underparts more or less freely sprinkled with white. Rather curiously, those which have the most white about the head show the least beneath, and those which are largely white beneath have the mask nearly immaculate. In the specimen representing the extreme of the former condition the crown is scarcely darker than in *C. virginianus*, while a white stripe, averaging about one-tenth of an inch in width, extends along the side of the head from the nostrils to the nape, passing just over the eye. The chin, also, is nearly pure white, and the throat everywhere thickly spotted with white, the only unmixed black areas being a small patch just below the eye and a 'cravat' about half an inch wide on the jugulum.

The bird illustrating the other extreme has the central line of the abdo-

* Bull. Am. Mus. Nat. Hist., No. 7, July, 1886, pp. 273-290, pl. xxiii.

men soiled white and the remainder of the underparts behind or below the jugulum, excepting a small area in the middle of the breast, variegated everywhere with black and white, each feather having a pair of rounded white spots tipping its opposite webs, these spots being usually embraced between the horns of V-shaped, black markings. In this series the shade of the cinnamon of the underparts is in proportion to the amount of white, the cinnamon being palest in the birds having the most white, and deepest in those which have the least. This fact has suggested to me the possibility that the paler, spotted birds may be the young, and those with nearly or perfectly black masks and immaculate underparts the adults; but Mr. Allen's theory that such variations indicate near relationship to, if not actual intergradation with, the white-throated *C. graysoni* is perhaps more probable. I notice, however, that all the specimens examined by Mr. Allen (except my type, taken early in August, and an unusually deep-colored and black-headed bird) were killed in September and February, months when young or immature birds would naturally outnumber the fully mature ones. Mr. Ridgway's "suspicion" that *C. graysoni* and *C. ridgwayi* "may be individual color phases of the same species" seems to me the least likely hypothesis of the three, unless we may assume that the two 'phases' have different habitats; or, at least, that a portion of the region occupied by each phase is not invaded by the other.

Mr. Cahoon found the Masked Bob-white about Bacuachi and at a ranch some eighteen miles north of Cumpas. They were abundant (several large covies were seen and eight specimens shot in one day), haunting patches of weeds in gardens and barren "sand wastes, where they fed on the seeds of a plant called red-root." Their habits are like those of *C. virginianus* and their call-notes precisely similar. When scattered they lie very closely.—WILLIAM BREWSTER, *Cambridge, Mass.*

Capture of a Third Specimen of the Short-tailed Hawk (*Buteo brachyurus*) in Florida.—Mr. E. H. Forbush, of Worcester, has lately sent me a *Buteo brachyurus* which was shot by Mr. Charles E. Bailey at the head of Ten-Mile Creek (a tributary of the St. Lucie River), Brevard County, Florida, March 11, 1886. It is an adult female of the white-bellied form. Two specimens (one in the black plumage) have been previously recorded* from Florida by Mr. Ridgway. The occurrence of this third bird strengthens the suspicion that the species may have become permanently established in that State.—WILLIAM BREWSTER, *Cambridge, Mass.*

A Third New England Specimen of Swainson's Hawk (*Buteo swainsoni*).—Mr. E. S. Bowler has just sent me a Swainson's Hawk, taken at Gouldsboro', Maine, Sept. 15, 1886, by Mr. E. Gordon. It is a young bird of the melanistic type, but not wholly black. The species is known to have occurred only twice before in New England, both times in Massachusetts—Salem, winter of 1871-72 (*Allen*, Bull. Essex Inst., X, 1878, 22); Wayland, Sept. 12, 1876 (*Brewster*, Bull. Nutt. Orn. Club, III, 1878, 39).—WILLIAM BREWSTER, *Cambridge, Mass.*

* Bull. Nutt. Orn. Club, VI, 1881, pp. 210, 212.

A Migration of Hawks at Germantown, Pa.—On the afternoons of September 21 and 29, 1886, great numbers of Hawks passed over here. They flew in a westerly direction and were observed from 2 to 4 p. m. I did not notice them in the morning or on any of the intervening dates. On the 21st they came in a long line, two or three at a time; occasionally they would circle about and wait until others caught up with them and then all would pass on together; at no time during the afternoon was I able to count more than thirty in sight at once.

On the 29th a few dozen passed over as described above, and then came a large flock containing at least two hundred and fifty Hawks. When directly overhead they divided into two flocks and began circling about, and finally passed on to the west.

I could see that there were several different species in the flock, but they were too high up for me to identify them.—WITMER STONE, *Germantown, Pa.*

The Saw-whet Owl in the District of Columbia.—I have also the pleasure of recording the occurrence of the Saw-whet Owl (*Nyctala acadica*) in the District of Columbia. The first one was found by a farmer about October 3. It was lodged in the branches of a small tree, where it had evidently died; from what cause is not positively known. This bird has the habit of doing this sort of thing. A few years ago I obtained one that had died in this manner, and about the same time, I think the following year, I had three brought to me that were found in barns dead. This experience very conclusively proves to my mind the delicate make-up of this bird and its inability to cope with the adversities of bird life. About a week later, I am informed, two others were obtained by a farmer just outside of the District limits. I have not yet ascertained whether or not these two birds were shot or found dead, as all the others were that I ever obtained.—FREDERICK S. WEBSTER, *Washington, D. C.*

The Imperial Woodpecker (*Campcophilus imperialis*) in Northern Sonora.—During a scouting expedition in the Apache campaign of last year Lieutenant H. C. Benson, of the U. S. Army, found this species to be common in the pine forests of the Sierra Madre, in Sonora, within fifty miles of the Arizona boundary. Owing to lack of time and facilities he was unable to preserve specimens, but a head which he sent to the National Museum renders the identification of the species positive. This magnificent bird—the largest of all known Woodpeckers, considerably exceeding the Ivory-bill in size (the wing measuring 11.70 to 13.20 inches and the exposed culmen 2.70 to 3.60 inches)—will doubtless soon be added to the North American fauna.—ROBERT RIDGWAY, *Washington, D. C.*

The Coppery-tailed Trogon (*Trogon ambiguus*) breeding in Southern Arizona.—A young male of this species, still in nestling plumage, though full grown, was collected August 24, 1885, in the Huachuca Moun-

tains, by Lieutenant H. C. Benson, U. S. A. This capture renders it extremely probable that the Trogon referred to by Mr. W. E. D. Scott in 'The Auk' for October, 1886, p. 425, as observed in the Chiracahua Mountains, was this species, which is the only one of the Red-bellied Mexican species whose range extends beyond the southern half of that country. Lieutenant Benson's specimen, which is now in the National Museum collection, will be described in full in the 'Proceedings' of the National Museum for 1887.—ROBERT RIDGWAY, *Washington, D. C.*

Capture of a Fish Crow (*Corvus ossifragus*) at Wareham, Massachusetts.—Inasmuch as my record (Bull. Nutt. Orn. Club, I, 1876, p. 19) of a Fish Crow seen at Cambridge, March 16, 1875, has been treated with wholesome caution—not to say incredulity—by several recent writers on New England birds, it gives me pleasure to present a second and quite unimpeachable instance of the occurrence of the species in Massachusetts. This time the bird was actually taken;—at Wareham, July 16, 1884, by Mr. E. A. Bangs, in whose collection the specimen is now preserved, and to whom I am indebted for the following account of its capture:

"I was fishing with my brother in Tihonet Pond and, as usual on such occasions, had my gun with me. While crossing the pond we saw two birds sitting on a tree near the mouth of a brook. From their actions I thought at first that they were Pigeons, but on getting nearer made out that they were black and resembled small Crows. We approached them with all possible caution, but they flew before we got within sixty yards. I brought down one, when the other circled over it for a moment, but it escaped before I could reload the gun (a single barrel). The one I killed proved to be a female in full plumage."—WILLIAM BREWSTER, *Cambridge, Mass.*

Occurrence of *Agelaius phœniceus* (L.) on the West Coast of England.—Additions to the useful 'List of Occurrences of North American Birds in Europe,' contributed by Mr. Dalglish to the 'Bulletin' of the Nuttall Ornithological Club in 1880, will, doubtless, always be welcome in the pages of 'The Auk.' It affords me much pleasure to add to that list the capture of an immigrant specimen of *Agelaius phœniceus* (L.)—a species which has been recorded as occurring in Britain on at least a dozen occasions on evidence of a more or less satisfactory nature, some of the specimens being supposed escapes from confinement. The bird now to be recorded struck against the lantern of the Nash Lighthouse, on the Welsh Coast of the Bristol Channel, at 3 A.M. on the 27th of October last, and was intended to be forwarded to me by its captor, Mr. Henry Nicholas, one of the most valued observers of the British Association's Bird Migration Committee, but during his absence for a few moments was unfortunately carried off by the cat. Mr. Nicholas had no difficulty in identifying the bird by the aid of his books, but I at once sent him a skin of the bird (an adult) in order to test his determination of the species, and he replied "that the bird killed very much resembled the one sent ex-

cept that the yellow on the wings was rather paler; the tips of the wings and the back of the neck were more sooty black, and I think it was a little larger";—a description indicating an immature bird, which is what we should have expected, since it is from the ranks of these youngsters that nine-tenths of the erratic wanderers visiting our shores are recruited. The late hours of the 26th of October and the early ones of the 27th would seem, from the returns, to have constituted an important 'immigration night,' as a few particulars furnished from the schedule of the Nash Light will make manifest:—At 9.50 P.M., Missel Thrushes (*Turdus viscivorus*); at 10 P.M., Bramblings (*Fringilla montifrigilla*); at 10.30 P.M., Snipes (*Gallinago cælestis*), four of which struck and were killed; at 12.40 A.M., Redwings (*Turdus iliacus*), two killed; at 2 A.M., Wrens (*Troglodytes parvulus*), one captured; at 2.10 A.M., Robins (*Erithacus rubecula*), and Black Redstart (*Ruticilla titys*), killed; and finally at 3 A.M., the bird in which we are specially interested. The wind prevailing at the time was a strong easterly breeze; weather cloudy with passing showers of rain.—WM. EAGLE CLARKE, F. L. S., *The Museum, Leeds, England.*

The Redpolls of Massachusetts.—In his 'Revised List of the Birds of Massachusetts' Mr. Allen includes only two Redpolls, *Acanthis linaria* and *A. l. rostrata*. He does not give his reasons for excluding *Acanthis hornemanni exilipes*, but whatever they may have been, this bird has an indisputable right to a place in our fauna. I have examined the specimen taken by Jeffries at Swampscott, Nov. 16, 1878 (see Bull. N. O. C., IV, April, 1879, p. 121); that shot by Atkinson and recorded by Dr. Brewer (Proc. Bos. Soc. N. H., XX, 1879, p. 270); and a bird in the Cambridge Museum, to which Mr. Allen probably referred when he attributed *exilipes* to Massachusetts in 1870 (Am. Nat., III, p. 583), and all three are unmistakable examples of *A. h. exilipes*. To this number I can add the following, none of which seem to have been previously announced*:

A male in the collection of Mr. H. M. Spelman, taken Nov. 15, 1880, in Cambridge; a pair shot at Revere Beach, Mass., March 8, 1879, by Mr. Foster H. Brackett, and now in the collection of Mr. Charles R. Lamb; a pair killed at Revere Beach, March 9, 1883, by Messrs. Spelman and Chadbourne, the former of whom has the male, the latter the female; and a male shot at Nantasket Beach, Feb. 22, 1883, by Matthew Lucas, Jr., and in the collection of the present writer. All of the males just mentioned are in gray (immature?) plumage.

Besides the forms above referred to, a fourth occurs, at least rarely, in Massachusetts. This is *Acanthis linaria holbellii* Brehm, of which I have two examples,† shot together at Swampscott, March 26, 1883; both are males, one in gray plumage, the other a rosy-breasted adult (?).

* Several of them, perhaps, were incidentally referred to by Mr. Chadbourne (Quar. Jour. Boston Zool. Soc., Vol. II, April, 1883, p. 31).

† Dr. Stejneger has kindly examined them and confirmed my determination.

Thus of the five Redpolls attributed to North America at large four have been found in Massachusetts. Of these *A. linaria* visits us in abundance, but of course more or less irregularly; *A. rostrata* in smaller numbers, but still plentifully at times, as in February, 1883 (see Bull. N. O. C., Vol. VIII, pp. 95-99, recorded as *Ægiothus linaria holboëlli*); *A. h. exilipes* in very limited numbers, and perhaps even less regularly than either of the two preceding; while *A. l. holboëlli* is apparently the rarest of the four and possibly a mere accidental straggler. The fifth North American form, *Acanthis hornemanni typica*, has never been taken within the limits of the United States.

As the recent shifting of names in this group is somewhat confusing it may be well to explain, that the *Ægiothus linaria holboëlli* which I re-recorded* from Massachusetts in 1883 is the *Acanthis linaria rostrata* of the A. O. U. List, and the *Acanthis linaria holboëlli*, now for the first time reported from our State, another and very different form, much more nearly like true *linaria*, from which it can be distinguished only by its greater size and longer bill. Those who care to look further into this subject should consult Dr. Stejneger's able papers on the genus *Acanthis*.†—WILLIAM BREWSTER, *Cambridge, Mass.*

[The omission of *Acanthis hornemanni exilipes* from my 'Revised List' was due (1) to the fact that the then latest authorities on this group did not recognize *exilipes* as occurring south of "Arctic America and North-eastern Asia"; (2) in view of the recent radical shifting of names, and the supposed not wholly trustworthy identification of at least some of the specimens of '*exilipes*,' referred to above as recorded from Massachusetts, the omission of this form was thought to be the safer course, especially as the alleged specimens were not then accessible to me for examination.—J. A. ALLEN.]

Vireo solitarius alticola in Tennessee.—In my list of birds taken in Roane County, Tennessee (Auk, III, p. 317), I record two specimens of *Vireo solitarius*. Mr. Ridgway has since informed me that the specimens are typical of the new form *alticola*. Both specimens were females, and were taken at the foot of the ridge, in a grove of small pines.—WILLIAM H. FOX, M. D., *New York City*.

Another Specimen of the Prothonotary Warbler in Massachusetts.—Recently when examining the collection of birds made by Mr. E. O. Damon at Northampton, Mass., I saw a beautiful *Protonotaria citrea* which he told me he killed in that vicinity *on high ground*, in May, 1883, and that two other specimens were shot at the same time by a friend of his. These examples, additional to those already recorded by Messrs. Brewster and Purdie (Auk, July and Oct., 1886), would seem to indicate that the species enters New England regularly.—JNO. H. SAGE, *Portland, Conn.*

* Bull N. O. C, VIII, pp. 95-99.

† Auk, I, 1884, pp. 145-155; *ibid.*, IV, 1887, pp. 30-35.

An Overlooked Specimen of Bachman's Warbler.—Some time since, while working on the fine old Lafresnaye Collection in the Boston Society of Natural History I unearthed an interesting and valuable specimen, nothing less in fact than a Bachman's Warbler (*Helminthophila bachmani*). This bird agrees closely with Audubon's figure and description of the adult female, but differs from a female in Mr. Cory's collection by having a well-marked patch of black on the jugulum, and traces of a dark band across the fore part of the crown. The body plumage is fresh and perfect, but shows no indication of a recent moult; the primaries are somewhat faded; the tail-feathers decidedly faded and worn.

The label bore the inscription, "No. 4079, *Dendroica virens*, Gmel., N. America." This proved to be a correct transcript of the entry under the corresponding number in the fac-simile Lafresnaye Catalogue belonging to the Society, save that in the latter "N. America" is written *in pencil*. Going still farther back to the scrap-book where the original Lafresnaye labels are preserved, each numbered in red ink to correspond with the catalogue just mentioned, I found "4079" on a small slip of paper, yellow with age, the writing so faded that only "Sylvicola ——" can be certainly deciphered. The dash is followed by a mark resembling the sign ♀ (was this sign used in ornithology in Lafresnaye's time?) but probably intended for a ? There is also something that looks like "orig ne?"

The plain inference from these data is that the label last described was the original one belonging to this specimen, and that the person who wrote it (whether Lafresnaye or some correspondent from whom he may have had the skin) was unable to identify the bird. It is equally obvious that the locality entered in pencil in our copy of the Lafresnaye Catalogue was added, doubtless inferentially, after the specimen came into the possession of the Society. It follows that the origin of the bird is unknown. Can it be the female figured in Audubon's plate? If I am not mistaken, the latter has been lost sight of.—WILLIAM BREWSTER, *Cambridge, Mass.*

Remarks on Four Examples of the Yellow-throated Warbler from Chester County, S. C.—A series of four specimens, taken during September, 1886, display characters so different from those commonly ascribed to the Yellow-throated Warbler (*Dendroica dominica*) of the Atlantic States as to merit special notice. The variations in each are as follows:—

1. ♀. Bill (from nostril), 9.2 mm.; superciliary stripe without yellow; yellow of chin and maxillæ interrupted anteriorly by white.
2. ♂. Bill (from nostril), 10 mm.; superciliary stripe, above the lores, very faintly tinged with yellow for about 4 mm.; thence immaculate to the base of the upper mandible; chin and maxillæ as in the preceding.
3. ♀. Bill (from nostril) 9.5 mm.; superciliary stripe, anterior to eye, strongly tinged with yellow for about 4 mm.; otherwise similar to the foregoing.
4. Essentially like 3, but with tinge of yellow in superciliary more pronounced.

In the flesh the yellow in the eye-stripe of 3 and 4 appeared sufficiently intense to warrant their being assigned to *dominica*; but as a skin, the yellow in 3 is less prominent, and it might be referred without violence to *albilora*. Unless the white adjoining the base of the lower mandible be considered diagnostic, the determination of such intermediates seems to be a matter of considerable uncertainty, depending on doubtful estimates as to quantity and intensity of the yellow in the white line above the eye.—LEVERETT M. LOOMIS, *Chester, S. C.*

Discovery of the Nest and Eggs of the Western Warbler (*Dendroica occidentalis*).—During the past season (1886) Mr. C. A. Allen had the good fortune to find two nests of *Dendroica occidentalis* in Blue Cañon, California. The first contained two eggs on June 4. It was left for a full set, but on visiting it three days later, Mr. Allen found it in a dilapidated condition, the eggs broken, and their yolks smeared over the lining, evidently the work of squirrels. Of the eggs, Mr. Allen writes: "I cannot give you an exact description of these eggs, but in size and appearance they resembled those of *D. aestiva*, only they were more heavily marked on their entire surface. I am very sorry now that I did not take them, but I wanted the full set, which, I think, would not have exceeded three, as I found a nest seven or eight years ago with three young, and another with the same number while returning from my second visit to the nest with eggs. All three nests were similarly placed:—in 'pitch pines,' from twenty-five to forty feet above the ground, on thick, scraggy limbs, where they were so well concealed that it would have been impossible to find them except by watching the birds, as was done in each instance. The female of the nest that was destroyed was seen digging up fine roots from a logging road morning after morning, but I could never follow her to the nest, which I finally found by accident; happening to shoot a Douglass's squirrel in the adjoining tree, the report of the gun started her out."

The nest with young, taken June 7, 1886, is now before me. It is composed of the fibrous stalks of herbaceous plants, fine dead twigs, lichens (*Evernia vulpina*), and a little cotton twine, and is lined with the soft inner bark of some coniferous tree and fine long hairs, apparently from the tail of a squirrel. The bright, yellow *Evernia*, sprinkled rather plentifully about the rim, gives a touch of color to the otherwise cold, gray tone of the exterior and contrasts agreeably with the warm, reddish-brown lining. Although the materials are coarse and wadded, rather than woven, together, the general effect of this nest is neat and tasteful. It does not resemble any other Warbler's nest that I have seen, but rather recalls the nest of some Fringilline bird, being perhaps most like that of the Lark Finch. It measures externally 4.50 inches in width by 2 inches in depth. The cavity is 1.25 inches deep by 2.50 inches wide at the top. The walls at the rim average nearly an inch in thickness.

The three young taken from this nest, together with both their parents, were also sent me by Mr. Allen. The young are about two-thirds grown

and sparsely clothed with first plumage, which above and across the breast is uniform grayish-brown, on the abdomen yellowish-white. There are two light (brownish-white) bars on the wing-coverts.

If I am not mistaken, the nests and eggs just described are the first identified ones that have been thus far reported, but Captain Bendire writes me that he has what he believes to be "a set of these eggs taken at the Big Meadows on the banks of the Des Chutes River near its headwaters; on my way from Fort Walla Walla, W. T., to Fort Klamath, Oregon, June 12, 1882. The nest was placed in the crotch of a willow overhanging the water, and the parent shot, but falling into the river was carried away. The eggs have a faint grayish-green ground color; two of them are heavily spotted and blotched with lilac and dark amber brown. They are about the size of the eggs of *D. æstiva*, and resemble the eggs of *D. blackburnia*, with the exception of the ground color, the green of which is not as perceptible as in the eggs of *blackburnia*."—WILLIAM BREWSTER, Cambridge, Mass.

What constitutes a Full Set of Eggs?—The question as to what constitutes a full set of eggs, and how to determine the number with any certainty, is a matter to which I desire to call attention, and, in doing so, will say that I have given the matter considerable thought, and have reached the conclusion, on account of the many nest robbers of the birds, that the larger number is the only safe one to enter as a full set. For example, say thirty nests of *first* sets of a species are found, with birds sitting, as follows: Four nests with four eggs in each; six nests with three eggs in each; ten nests with two eggs in each; and ten nests with one egg in each. In this case I would enter three and four—possibly two to four—as a full set. But in no case one to four, believing the undisturbed birds of a species do not vary much, if any, as to number of eggs laid. Say four eggs in first set, and three in the second; that is, in case the first set is destroyed, or the birds rear two or more broods in a season; for I find as a rule that the first set is the larger one.

Many of the birds, especially the larger ones that breed in trees, as Hawks, Herons, etc., cannot hide their bulky nests; in fact, the branches overhead are more a protection to the thieves than to the nests when the parent birds are away; for all birds, however watchful, will, during the early stages of laying and love making, steal away from their nests a short time, for a sail or flirtation, which affords the cunning Crows, Jays, squirrels, etc., an opportunity to come up from the lower limbs and steal the eggs unobserved, or before the parent birds can return to protect them. Such robberies, and the advancement of incubation, make the birds more watchful and closer sitters. But, with all their vigilance, I think to find a full set the exception and not the rule. It is to the interest of paid collectors and dealers in eggs to have the smaller as well as the larger number treated as full sets. But the oölogist at heart, whether a collector or not, can have but one desire, and that is to arrive at the facts in the case.

In my 'Revised Catalogue of the Birds of Kansas,' I was governed in

giving the dimensions and coloration of the eggs by the sets examined, but I did not venture to change the number when given by other writers, lest such changes, based on my limited observation, might prove erroneous or misleading; but the more I look the matter over, its importance to my mind increases. I therefore call attention to it, hoping to draw out, through 'The Auk' and other sources, the views of others.—N. S. Goss, *Topeka, Kans.*

CORRESPONDENCE.

[Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.]

The Camera and Field Ornithology.

TO THE EDITORS OF THE AUK:—

Dear Sirs:—A year ago last autumn I purchased me a first class photographic camera with all the chemicals and appliances complete. In doing this I had three or four objects in view, in which it struck me that this instrument could be of very considerable assistance. In the first place, I was led to believe that it would prove a valuable auxiliary in my anatomical work, such as the photographing of certain dissections, osteological subjects, and the reduction in size of large skeletons that I intended to have lithographed to illustrate my memoirs. Secondly, I found myself in an Indian country that was rapidly undergoing those changes which an advancing civilization is sure to bring with it, and it was my aim to preserve, in the way of good photographs, much that pertained to their life, habits, and mode of living in the past, etc. Lastly, however, I felt that I had a very pretty field open before me that would, if worked with patience, yield another valuable series of figures for illustrative work, and this was the photographing in their native haunts many of the wild animals of the country. During the past ten years I have seen the time when I have been near enough to have obtained good photographs, either in the mountains or on the boundless plains, of such animals as our antelope, buffalo, mountain sheep, and a great many of the smaller mammals and birds. In this letter, however, it is my object merely to say a few words in regard to the advantages to be derived from the use of the camera in field ornithology. In the first place, if we can secure good photographic negatives of such subjects, the rapidly-improving processes permit us to transfer them with absolute accuracy to either metal or stone, and if I am not mistaken, to wood, also. Moreover, these processes are becoming cheaper and better every year that goes by, so that it falls within the means of nearly every scientific publishing medium to reproduce such drawings

from the negatives, and thus secure the most accurate class of figures of living birds.

Again, if we photograph, or rather print them on non-albumenized paper, they may be *colored* very nicely from the original subject. By the use of an 'instantaneous shutter,' I find that birds may be obtained in nearly all positions, and I know of no pursuit so thoroughly full of interest for the ornithologist as this photographing of birds in their native haunts. It requires, too, all the ingenuity at our command, to say nothing of patience, to pursue it successfully. Birds may be photographed in the most engaging of their avocations, and in the most interesting attitudes for illustrations that one can possibly imagine. Out here on the prairies we will often find an old stump or stalk, upon which a dozen or fifteen species of birds will alight during seven or eight hours, on almost any day suitable to use the camera upon them. Now all we have to do is to properly set up our instrument near this point, conceal it in such a way as not to alarm the birds, focus it sharply upon the perch where they alight, place on your 'snap shutter,' and fix it with a string, and then remove yourself far enough away to pull it, when you have a subject sitting to your liking. Birds that you have wounded but slightly may be photographed under the most favorable circumstances; they may also be taken while sitting on their nests; in actual flight, however swift; in pursuit of their food; in leading about their young; indeed, the list is almost an endless one.

Rookeries also offer admirable subjects, and a splendid field is open at those wonderful resorts of water-birds in such places as the Bahamas or the Alaskan coasts. In the former locality, during the breeding season, I have seen the time when I could have secured excellent pictures of the majority of species in the most interesting positions possible.

Even now, there are a great many of our birds that still remain to be figured, and a number that have already been produced,—yes, in some cases by so famous a master as Audubon,—that will repay reproduction. Take for instance his *Myadestes townsendi*; it is an exceedingly indifferent representation of the bird, and figures only the female besides. Moreover, it is evident from his illustration that Audubon was under the impression (he never having seen it alive) that its action was more or less akin to some such bird as a Redstart, whereas its behavior in life fails to remind us at all of any such species.

If I remember correctly, my photographic outfit cost me something like \$125, but very good ones, I believe, can be purchased for about \$50, which will take an excellent 5 X 8 picture. The art, in its present state of perfection, is a delightful study and brimful of interest. Never shall I forget my sensations, as, shut up in a small, dark room, lit only by the ruby lantern, I studied to develop my first plate of a living animal, taken by myself. It was a fine old *Neotoma*, and I can well remember my enthusiasm as I saw his form slowly, but sharply, come out on the plate, as I rocked it to and fro in the developing tray.

R. W. SHUFELDT.

Fort Wingate, N. Mex., Feb. 10th, 1887.

Classification of the Macrochires.

TO THE EDITORS OF THE AUK:—

Dear Sirs:—Dr. Shufeldt's letter in the October 'Auk,' last year, requires only a few lines in reply from my side.

I am sorry that Dr. Shufeldt in "carefully reading a number of times" the sentence commencing: "internally they differ," etc., failed to see that the whole was a case of typographical error, and still more sorry that he did not know "the kind of comparison he [I] wishes to institute between the sternum of a Swift and a Swallow," when I referred to the bifurcate manubrium and deeply "two-notched" sternum of the latter. Dr. Shufeldt will probably believe me, when I state, that in the original, from which the sentence in question was quoted, the kind of comparison was made clear, and that the words "*pointed manubrial process and no posterior notches to the*"—an entire line—has fallen out between "a" and "sternum." I cannot prevent Dr. Shufeldt from taking exception to the remark that the sternum is 'two-notched' in the Swallows, notwithstanding the fact that he admits its having "a pair of notches in its xiphoidal extremity," and my own belief that "a pair of notches" and "two notches" mean exactly the same thing. but I must protest against his remark that "the two-notched sternum is seen in such forms as *Picus*." To the uninitiated mind it would seem to be a decided misnomer to call the sternum of *Picus* two-notched when the fact remains, that it possesses four notches. "Such forms as *Picus*" of course, have two notches on each side of the mesial line, but Dr. Shufeldt will probably pardon me for not calling a horse a two-legged animal, or a man a one-legged animal, notwithstanding the fact that they have respectively two legs and one leg on each side of the mesial line. But if Dr. Shufeldt calls a horse a four-legged animal, why object to calling the sternum of the Woodpeckers four-notched?

In regard to the similarity or dissimilarity of the flight of the Swifts as compared with that of the Swallows or Hummingbirds, I shall only remark that Dr. Shufeldt's supposition that I would never have asked, "what differences are there in the Swifts' flight from that of the Swallows' that should have caused such a remarkable modification towards the Hummingbirds," if I "had ever had the opportunity to compare in nature the flight of two such birds, for example, as *Micropus melanoleucus* and *Tachycineta thalassina*," will not hold for the simple reason that I have had the opportunity to compare in nature the flights of several species of Swifts and Swallows. I am also familiar with the flight of the Hummingbird, and in spite of this, or rather just on account of my observations, do I reiterate that the flight of the Swift is decidedly more like that of the Swallow than it is like that of the Hummingbird. And I also insist that I am still without an answer to the question, What in the nature of these birds' flight has brought about such an extraordinary similarity, osteologically, myologically, and pterylographically in the wing-structure of the Swifts and Hummingbirds, as compared with that of the Swallows? For surely, it cannot be denied, that the flying apparatus of Swifts and Hummers pos-

esses features and combination of features quite unique, and shared by no other birds, and especially not by the Swallows. That a Swift hovers in front of its nest before entering it "like a Hummingbird over a flower," shows certainly no special relationship, for I have seen despised English Sparrows do the same, and as for swift and precipitous flight and its instantaneous checking I might quote numerous birds which in their wing-structure show no analogy to that of the Macrochires. The *superficial* similarities of certain structures in the Swallows' and the Swifts' wings can undoubtedly be traced "to the modification of these structures gradually brought about by the habits or actions of the forms in question," to use Dr. Shufeldt's own phraseology. It is upon the recognition of the essential and the unessential similarities, and of the superficial analogies and the radical affinities, that the present question hinges.

Yours, very truly,

LEONIARD STEJNEGER.

Smithsonian Institution,
December 25, 1886.

TO THE EDITORS OF THE AUK:—

Sirs:—Will you kindly allow me a little space in which to reply to Dr. Shufeldt's comments on the footnotes of my recent paper on 'The Affinities of *Chætura*'?

At the outset let me say that I object less to the separation of Swift and Hummingbird than to the union of Swift and Swallow. As Dr. Shufeldt now concludes (or did in October last) that the Swifts are not a family of Passeres placed next the Swallows, but an order by themselves, we are less at variance than when the paper on *Chætura* appeared.

In one and the same paragraph Dr. Shufeldt objects to my statement that Professor Huxley united the Swifts and Hummingbirds, while quoting Huxley's own words, which show the statement to have been correct! (p. 86). The remark that Professor Huxley "evidently believed that Swifts were but profoundly modified Swallows" is purely an assumption; but even if it be a correct one, the fact remains that he believed them to be so *very* "profoundly modified" as to require a place in quite a different order. In view of the fact that Dr. Shufeldt has not been in Washington for over two years, it is a little surprising that he should assume to know exactly what material is contained in the collections of the National Museum. Nevertheless, Dr. Shufeldt is this time correct in his supposition, for at the time of writing neither *Panyptila*, nor *Tachycineta thalassina* (*T. bicolor* I did have) were in my possession, although since then crania of both species have been extracted from skins, supplied by the courtesy of Mr. Ridgway, and verify my statement that the *maxillo-palatines* as figured by Dr. Shufeldt are imperfect. While my specimen of *Panyptila* is a poor one, having suffered from decalcification, traces of the slender maxillo-palatines still remain, and show them to be practically of the same shape as those of *Chætura*, *Cypselus apus*, and *Dendrochelidon mystacea*,

this latter bird having been kindly furnished me by Professor Henry A. Ward. Dr. Shufeldt's very figure of *Tachycineta* shows at a glance that the expanded ends of the maxillo-palatines have been broken off, and I have yet to learn that doubling the size of a drawing doubles its accuracy.

I should have been very glad to have found myself in error concerning *Panyptila*, as it would have given me another, although slight, point of resemblance between the Swifts and Hummingbirds.

The material in the National Museum has already taught me that the sternum may be notched or entire in Auks of the same species, and the same thing will be found to occur in the Loons; also, if my memory is not treacherous, in other water fowl. The reason for this is, it seems to me, very evident, while the fact itself has no bearing whatever on the present case. That Dr. Shufeldt is aware of this is shown by his haste to remark that "Of course in recording what I have just done in the preceding paragraph, I by no means wish it to be understood that I in any way underrate the significance of the 'notching' of the xiphoidal end of the sternum, in the *vast majority* of birds." I would also note that the entirety of the posterior margin of the sternum was but one of *four* good characters pointed out. Since Dr. Shufeldt places but little reliance on the structure of the bony palate as a taxonomic character, has had his faith in the sternum shaken, and rejects the modifications of the limbs (aside from the modification of the phalanges, on which he lays considerable stress!), it would seem that but little of the skeleton was left on which to found comparative distinctions.

That the 'osteologist-in-chief' is not conversant with a large amount of ornithological literature is unluckily too true, and he has always regarded it as a great misfortune. Still, had my commentator been less engrossed by the footnotes, he might have inferred from a paragraph almost at the very outset, that I was not *entirely* ignorant of Dr. Parker's opinions on the subject under consideration.

In conclusion, allow me to express my surprise at the concluding paragraph of Dr. Shufeldt's letter, the sarcastic tone of which leads me to infer that he prefers to evolve opinions which do *not* compare favorably with those held by living masters in morphology.

Very respectfully,

FREDERIC A. LUCAS.

Washington, D. C., Jan. 25, 1887.

The Sense of Smell in *Cathartes aura*.

TO THE EDITORS OF THE AUK:—

Sirs:—In his article in the January number of this Journal, Mr. Ira Sayles has added another instance to the already long list of fallacious 'proofs' of the remarkable power of scent in the American Vultures. Ignoring the fact that there is certainly room for some difference of opinion as to what constitutes a remarkable power of smell, he sets aside as utterly

worthless the experiments of Audubon, Bachman, and Darwin, and offers his own chance observations as proof that these able and careful observers were entirely wrong as regards both their methods and conclusions. It seems almost superfluous to say that our critic can scarcely have read the original accounts of the experiments he condemns, or he would neither accuse so thoughtlessly nor explain so easily.

As to the anatomical evidence introduced, it may be remarked that such an argument from structure to function is often extremely unsafe, even for the accomplished anatomist, and the danger is greatest where the experience is least. True, Owen has shown that the Turkey Buzzard has well-developed olfactory nerves; but in the same paper (*P. Z. S.*, V, 1837, p. 34, 35) where he records this, he states that the same nerves were found to be fully as well developed in the Goose, while even in the Turkey they were fairly developed, although only about one sixth as large. Furthermore, this distinguished anatomist, a part of whose testimony Mr. Sayles finds so "entirely satisfactory," closes his paper with the remark, that "The above notes show that the Vulture has a well-developed organ of smell, but whether he finds his prey by that sense alone, or in what degree it assists, anatomy is not so well calculated to explain as experiment." Again, according to Owen (*Comp. Anat. and Phys. Vert.*, II, 132), the olfactory nerves are relatively largest, among birds, in the Apteryx; yet this bird appears to use its power of smell mainly for the detection of the worms which form its daily food, and for which it probes in the ground, thus apparently using its keen scent only at very short distances,—hardly more indeed than the length of its own bill.

Turning now to the personal observations of Mr. Sayles, let us consider the evidence which he calls "positive," yet which I regard as entirely inconclusive. In the first place, the data given us are very incomplete, and several of the most important points recorded were observed merely by chance, and before any significance was attached to them; and one can scarcely help questioning the accuracy of many of the details of such observations, especially when it is remembered that the occurrences narrated took place more than a dozen years ago, and we are not informed whether the narrator writes from memory or from notes taken at the time. It is doubtful whether, under the most favorable circumstances, the movements of Buzzards could be fairly watched at a distance of "more than two miles," and we are not even told how this distance was determined. Again, as the observations were simply accidental, it is more than possible that single Buzzards had already reached the place unobserved by our critic, but *not* without attracting the attention of the distant flock, which responded in the usual manner. In order to account for the coming of these first few individuals we have only to assume that the dogs had carried out and left exposed a few fragments of offal, which would readily be detected by any sharp-sighted Buzzard which chanced to be passing, or which may have been in the habit of visiting the plantation every morning.*

*In March, 1886, the writer received from S. E. Cassino & Co., the publishers of the 'Standard Natural History,' a lengthy criticism of his statements about the power of

Finally, the fact that the birds failed to find the source of the stench, and "gave up the search" after staying about "for an hour or two," is totally irreconcilable with the possession of such powers of scent as would enable them to detect the same odor at a distance of more than two miles.

If the space can be spared. I should be glad, in a future number of 'The Auk,' to discuss this subject further, and to give a brief *résumé* of the evidence on both sides of the question.

Respectfully,

Washington, D. C., March 4, 1887.

WALTER B. BARROWS.

NOTES AND NEWS.

DR. JOHN M. WHEATON, one of the original members of the A. O. U. and well known as an ornithologist, died at his residence in Columbus, Ohio, January 28, after protracted illness from consumption, at the age of forty-six. Dr. Wheaton has for many years been an occasional contributor to current ornithological literature; his principal work, however, was a report on the Birds of Ohio, published in 1882, in the fourth volume of the Geological Report of the State of Ohio.* His unrivalled collection of the birds of Ohio is now at the State University. Dr. Wheaton was born at Columbus, and was educated at Davison University; he afterward studied medicine, graduating from the Starling Medical College in 1884, and immediately after entered the army as an assistant surgeon. In 1867 he was made Professor of Anatomy in the Starling Medical College, which position he held till his death. He was also a trustee of the college, and secretary of the board. He was a successful physician, a teacher of recognized ability, and held in high esteem by all who knew him. He leaves a wife and a son nine years of age. Dr. Wheaton's death is the first that has occurred among the Active Members of the A. O. U.

CONGRESS has appropriated \$12,000 for carrying on the work of the Department of Economic Ornithology and Mammalogy for the year ending June 30, 1888. Now that the adjournment of Congress has brought some relief to the Government Printing Office, it is hoped that some of the long-expected special reports of the Department will soon be put in type.

scent in Vultures, as published in Volume IV of that work. The criticism, which was by Mr. Sayles, embodied all the facts since published by him in 'The Auk,' and much additional matter on various subjects. In connection with the particular instance cited above, it was there distinctly stated that a flock of Buzzards was no unusual sight on the plantation, and that nothing was thought of it in this case until they were seen wheeling about the *open wood-shed* (the italics are mine) where, during the night, the pot of offal had been upset by the dogs.

* For a review of this work see Bull. Nutt. Orn. Club, Vol. VIII, p. 110.

THE bill authorizing an appropriation of \$400,000 by the City of New York for the construction of an addition to the American Museum of Natural History building has passed both branches of the New York State legislature almost unanimously and has become a law. The addition will be at the 77th Street end of the present structure, and will be of about the same size as the portion already constructed. It is expected that work on the proposed addition will be begun at an early day.

Two numbers of a new monthly journal, called 'The Audubon Magazine,' have appeared. It is "published in the interest of the Audubon Society for the Protection of Birds," by the 'Forest and Stream' Publishing Company of New York. Besides being a medium of communication between the friends of Bird Protection, it is intended to interest the young in the general subject of natural history, giving, however, special prominence to ornithology. Its purposes are excellent, and, under the editorial supervision of Dr. George Bird Grinnell, it promises to become a very acceptable and useful popular journal, covering essentially a new field, where much good may be accomplished.

ANOTHER very promising addition to periodical literature devoted to popularizing natural history is 'The Swiss Cross,' the new official organ of the Agassiz Association. It is a monthly, edited by Harlan H. Ballard, President of the Agassiz Association, and published by N. D. C. Hodges (the editor of 'Science'), at 47 Lafayette Place, New York. It is "devoted to spreading among the people an accurate knowledge of nature." Three numbers have already appeared.

THAT the interest in the subject of Bird Protection is earnest and widespread is evinced by the number of journals which are springing up devoted more or less exclusively to the support of the movement. Besides 'The Audubon Magazine,' noticed above, we have received three numbers (Jan.-March, 1887) of a monthly journal entitled 'The Bird Call,' published by the Pennsylvania Audubon Society, Miss A. C. Knight, President, No. 1012 Walnut Street, Philadelphia. This Society was organized in April, 1886, and duly incorporated the following August. 'The Bird Call' is issued in aid of the humane work of the Society—"to plead for mercy to God's messengers of beauty, use, and song," and to aid in "the campaign against the mandates of a cruel and senseless fashion." We wish 'The Bird Call' every success in its good work.

MR. C. J. MAYNARD has issued a prospectus of 'Illustrations and Description of the Birds of the Bahamas.' The work is to be large folio in size, and published in from fifteen to twenty parts, monographic in character. Each part is intended to be "an exhaustive treatise of the species under consideration, complete in itself," and will contain a colored plate and an uncolored one, the latter devoted to the osteological and other anatomical details described in the accompanying text, which will include biographical as well as technical matter. The first part, announced as

now ready "contains a finely colored plate on which are represented seven specimens of the Bahama Fruit Finch (*Spindalis zena*), covering all stages of plumage from nestling to adult." etc.

THE antedating of papers or works on natural history is an evil to which attention has often been called, and efforts have from time to time been made, on the part of both authors and editors, to guard against misdating. These efforts, however well intended, seem not always effectual, and even may make a bad matter worse. The dilatoriness of the Government Press in issuing reports and other works relating to science is notorious; such documents sometimes slumbering in the form of printed sheets for months and even years, before they are distributed to the public. Their authors are powerless, as are the would-be readers of these important scientific contributions, to secure their prompt publication; they frequently do not reach the public till a year or two later than the supposed date of publication borne on their title-pages. Cases of this sort are too numerous and too well-known to require specification; but it seems a pity that the 'Proceedings' and other publications of the National Museum should have to be added to the category of antedated publications. Presumably to fix the exact date of publication, each signature of the 'Proceedings' is dated with what is supposed to be the date of its issuance from the Government Printing Office; and generally the date has accorded reasonably well with the date of their reception by libraries and the specialists to whom they are sent. This, however, has not been the case of late, three or four months sometimes having elapsed between the presumed dates of publication borne on the sheets and the actual date of their distribution. In the interest of both science and veracity, it would be well to omit the dates altogether, or take some means to have them give correctly the information implied.

WE are pleased to learn that Mr. Charles F. Morrison, now of Fort Lewis, Colorado, Vice-President of the Bristol County, Mass., Ornithological Club, is engaged in the preparation of a complete list of the birds of Colorado, which will form 'Publication No. 1' of the recently organized Colorado State Ornithological Association, of which Mr. Morrison is President *pro tem*. The members of the Association are coöperating in the work, and excellent circulars of instruction have been issued by Mr. Morrison, calling upon them for full and carefully annotated lists of the birds of their respective localities. Doubtless good results may be safely anticipated from this carefully planned system of coöperation.

MR. THOMAS McILWRAITH'S excellent little manual, entitled 'The Birds of Ontario,' comes to hand barely in time for this brief announcement. It forms an octavo volume of 320 pages, published by the Hamilton Association, of Hamilton, Ontario.

THE AUK:

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No. 3.

DESCRIPTIONS OF SIX SUPPOSED NEW SPECIES
OF BIRDS FROM THE ISLANDS OF OLD
PROVIDENCE AND ST. ANDREWS,
CARIBBEAN SEA.*

BY CHARLES B. CORY.

Lampornis hendersoni, sp. nov.

SP. CHAR.—Similar to *L. prevosti*; but bill much shorter and back green instead of bronzy; the bluish black patch on the throat longer and narrower, the top of the head shows a faint ash tinge.

Adult ♂ (Type, No. 10190, Coll. C. B. Cory):—Upper plumage bronzy green, a slight ash tinge on the top of the head; a stripe of bluish black down the centre of the throat, becoming blue on the breast, bordered on either side by grass green, showing bronzy green on the sides of the neck; a tuft of white on the thighs; upper surface of central tail-feathers dark bronze green, outer feathers brownish purple, showing rufous in some lights, edged with dark blue; most of under surface of tail-feathers purple when held in the light; quills dark brown; bill black, about two-thirds as long as that of *prevosti*.

Length, 4; wing, 2.65; tail, 1.50; bill, .78.

Female (No. 10196, Coll. C. B. Cory):—Upper parts similar to the male; throat white with a broad black stripe passing down the centre, becoming dark bluish green on the lower throat and upper breast; under surface of tail-feathers tipped with white and bordered sub-terminally with dark steel blue.

Habitat. Old Providence Island.

[*An author's edition of 250 copies of this paper was published May 28, 1887.—EDD.]

The immature bird has a patch of bright green on the centre of the throat separated by a narrow white stripe from the deep chestnut brown which borders the sides of the throat and breast; most of the tail-feathers are broadly tipped with white, showing a sub-terminal band of dark blue.

***Vireosylvia canescens*, sp. nov.**

SP. CHAR.—Resembles *Vireosylvia grandior* Ridgw., but is ashy instead of greenish on the back, and lacks the olive on the flanks and the yellowish crissum; tail-feathers not green.

Adult ♂ (Type, No. 10195, Coll. C. B. Cory):—Head ash gray, becoming dull grayish olive on the back; a superciliary stripe of dull, buffy white, bordered by a narrow streak of brown on the sides of the crown; a malar stripe of dull brown. Underparts white, faintly tinged with olive; crissum dull white, showing a slight yellowish tinge at the vent; quills and tail brown, showing a tinge of olive on the outer webs of the inner feathers.

Length, 5.60; wing, 3.50; tail, 2.60; tarsus, .80; bill, .70.

Habitat. St. Andrews Island.

***Icterus lawrencii*, sp. nov.**

SP. CHAR.—Similar to *Icterus bairdi*; but having the upper plumage and especially the upper tail-coverts more olive. General plumage apparently darker.

Adult ♂ (Type, No. 10193, Coll. C. B. Cory):—Above yellowish olive, showing a faint brown tinge on the head and nape, nearly absent in some specimens; rump and upper tail-coverts yellowish olive, like the back; throat black, the black passing in front of the eye extending to the nostril; rest of underparts pale orange yellow; wings black, the coverts pure white, forming a broad white wing-patch; tertials and secondaries heavily edged with white, primaries showing a faint indication of white edging on the inner feathers. Tail black, narrowly tipped with dull white.

Length, 7.80; wing, 4.40; tail, .37; tarsus, 1; bill, .80.

Habitat. St. Andrews Island.

I take pleasure in dedicating this beautiful species to Mr. Geo. N. Lawrence, of New York.

***Mimus magnirostris*, sp. nov.**

SP. CHAR.—Bill very large; breast and throat showing a faint tinge of reddish brown, lacking in some specimens.

Adult ♂ (Type, No. 10192, Coll. C. B. Cory):—Upper plumage

slaty gray, showing a brownish tinge on top of the head; underparts white, tinged with orange brown on the throat and breast; tail brownish black, tipped with white, narrowly on the two central feathers but gradually becoming heavier, until the outer feathers have the terminal third and outer web white; quills brownish black, faintly edged with white; bill and feet black.

Length, 11.50; wing, 4.85; tail, 5.75; tarsus, 1.40; bill, 1.

Habitat. St. Andrews Island.

The orange brown coloration of the throat and breast is apparently not a constant character, as several specimens before me show it but slightly and two not at all.

Engyptila neoxena, sp. nov.

SP. CHAR.—Resembles *Engyptila collaris*, but is more olive on the back, and lacks the violet metallic collar, which is apparently replaced by green; the general color of the upper parts more closely resembles that in *E. jamaicensis*, but the specimens of the latter bird now before me have the top of the head purplish, showing a greenish gloss on the occiput, while in *E. neoxena* the top of the head is white shading to ash gray.

Adult ♂ (Type, No 10194, Coll. C. B. Cory):—Top of head white, shading into gray on the occiput; chin and throat white, becoming pale purple or violet on the breast; sides of the neck and breast showing metallic purple mixed with metallic green when held in the light; feathers on the upper back showing metallic green, faintly tinged with purple; back dark olive; belly dull white; rest of plumage resembling that of *E. collaris*.

Length, 9; wing, 4.75; tail, 4; tarsus, 1.

Habitat. St. Andrews Island.

But two specimens of this interesting bird were taken and both were badly prepared. It is possible that a larger series would show it to be not specifically separable from *E. jamaicensis*.

Dendroica flavida, sp. nov.

SP. CHAR.—Resembles *Dendroica rufivertex*, but has the orange brown on the head more restricted and paler; throat unspotted, or very nearly so; underparts, including sides and flanks, heavily striped with rufous brown.

Adult ♂ (Type, No. 10191, Coll. C. B. Cory):—Top of the head orange brown showing yellow in front of the eye; nape, back and upper tail-coverts yellowish olive; throat bright pale yellow, touched with one or two indistinct pencilings of brown, rest of underparts

yellow, heavily streaked with rufous brown; wings dark brown edged with yellow; tail-feathers brown, heavily marked with yellow on the inner webs and faintly edged with it on the outer.

Length, 4.75; wing, 2.35; tail, 2; tarsus, .80; bill, .30.

Habitat. St. Andrews Island.

A LIST OF THE BIRDS TAKEN BY MR. ROBERT HENDERSON, IN THE ISLANDS OF OLD PROVIDENCE AND ST ANDREWS, CARIBBEAN SEA, DURING THE WINTER OF 1886-87.*

BY CHARLES B. CORY.

Old Providence.

- Dendroica palmarum* (Gmel.).
Dendroica coronata (Linn.).
Compsothlypis americana (Linn.).
Seiurus noveboracensis (Gmel.).
Seiurus noveboracensis notabilis (Grinn.).
Seiurus aurocapillus (Linn.).
Seiurus motacilla (Vieill.).
Certhiola tricolor Ridgw.
Vireo approximans Ridgw.
Vireosylvia grandior Ridgw.
Spiza americana (Gmel.).
Euethia bicolor (Linn.).
Tyrannus tyrannus (Linn.).
Elainea cinerescens Ridgw.
Lampornis hendersoni nobis.
Coccyzus minor (Gmel.).
Melopelia leucoptera (Linn.).
Columba leucocephala Linn.
Actitis macularia (Linn.).
Ardea virescens (Linn.).
Ardea cærulea (Linn.).
Ardea tricolor ruficollis (Gosse).
Fregata aquila (Linn.).

* [An author's edition of 250 copies of this paper was published May 28, 1887.—EDD.]

Sula piscator (Linn.).
Puffinus auduboni Finsch.

St. Andrews.

Mimus magnirostris nobis.
Galeoscoptes carolinensis (Linn.).
Mniotilta varia (Linn.).
Dendroica flavida nobis.
Seiurus noveboracensis (Gmel.).
 ?*Certhiola tricolor* Ridgw.
Vireosylvia canescens nobis.
Vireo noveboracensis (Gmel.).
Euethia bicolor (Linn.).
Icterus lawrencii nobis.
 ?*Elainea martinica* (Linn.)
Sphyrapicus varius (Linn.).
Ceryle alcyon (Linn.).
Engyptila neoxena nobis.
Actitis macularia (Linn.).
Ardea virescens (Linn.).
Ardea tricolor ruficollis (Gosse).
Fregata aquila (Linn.).
Sula piscator (Linn.).

BIRDS OF TOM GREEN AND CONCHO COUNTIES,
 TEXAS.

BY WILLIAM LLOYD.

THE present paper deals principally with the avi-fauna of the valleys of the Concho River and its tributaries east to the Colorado River. It also includes the birds of the plains west of the Pecos River, and north to the Texas and Pacific Railroad, and some few noted incidentally south in Crockett and Edwards Counties, and in Nueces Cañon. The district has a general and nearly equal elevation of nearly 2000 feet above the sea-level, and

is well watered. Spring and Dove Creeks, with the South Concho, flow into the Middle Concho, which unites with the the North Concho at San Angelo, Tom Green County (Lat. $31^{\circ} 22'$, Long. $23^{\circ}, 19' W.$), and forms the Main Concho, which, after a general easterly course of about forty-five miles, receiving Kickapoo, Lipan (Euterpe on map), Duck, Mustang, and Horse Creeks, falls into the Colorado River, in the extreme east of the county. The creeks are well timbered with pecan, elm, hackberry, a species of walnut, and willows, etc., and have well defined bottoms of an average width of about fifty yards, but frequently are half a mile wide, densely grown with scrub mesquit, small groves of hackberry, wild china, and other small trees, overrun with poison ivy, and laden with parasitic mistletoe. At the heads of the larger creeks is generally a considerable growth of various small oaks, while the hillsides are covered with shin-oak and a species of laurel; and in Tom Green County the head draws of the creeks are full of cedar groves. There are no hills worth noting in Concho County, where the surface is level prairie, gently rolling and broken only by the creeks and dry ravines. It was once treeless but is now being rapidly covered with dwarf mesquit; in many places there is not even a shrub; other parts are well grown with cat-claw, algarita, chapparal, wahilla (a kind of evergreen), and nopal cactus. In summer it is covered with hundreds of flowering plants, of which the verbena and lupin are most numerous. Tom Green County is more broken and has well-defined chains of hills dividing the upper water courses. They are not timbered, however, and, like the Castle Mountains on the plains, exercise no appreciable influence on our birds. The Pecos River is entirely devoid of timber, with exception of the ubiquitous button bush, and has no bird-life whatever peculiar to it, owing no doubt to the alkaline nature of its waters. There is a lake of fresh water on the plains which I have never examined. About a dozen species of cactus occur. A swamp on the head of South Concho is the only ground of the kind in the district; this has some very large live oak studding its borders, and water oak in it. Acres of thistles, in various places in both counties, form in winter admirable feeding grounds for various birds. The soil is very fertile, and underlaid with limestone, of the middle Eocene. Stock-raising was, until the last few years, the only pursuit; now farms are

numerous, and an increasing area is in cultivation every year, on which are raised millet and sorghum for the winter use of stock.

The prevailing wind throughout the year is from the south, tempered in winter every ten days (on an average) by a brisk norther that drives all the birds to the river and creek bottoms. The temperature in winter, though once recorded as below zero, is for December and January 35° in the morning, 45° to 70° at noon, and 40° at dusk. The winter of 1886-87 was exceptionally mild; the temperature has not gone below 10° , and it sleeted once, with a register of 20° . In spring the average temperature is 70° to 80° at noon, rising to 95° in April, and in summer touches 102° .

I have carefully hunted each creek with the sole exceptions of Grape Creek and North Concho—the latter scarcely touched—and have been to Pecos River four times, along the line of the Texas and Pacific Railroad, across the sand-hills, and south into Crockett County and beyond. After I became an observer for the Mississippi Valley District I noted arrivals every day carefully, as follows:—fall, 1884, Main Concho, near mouth; February to June, 1884, Middle Concho; fall, 1884, South Concho and Plains; 1885, spring, on Spring Creek; fall, on Kickapoo, Lipan, Main Concho, Middle Concho, and Plains; 1886, fall, Lipan and Main Concho, besides visiting all the other localities at various periods.

The record, besides including the following (about 240 species and varieties), should, I have no doubt, contain various others noted north and south of me, as the Blackburnian Warbler, Ground Dove, Prairie Falcon, etc., but as I have not been able to record them for the last three years, with Messrs. Sennett's, Brown's, Goss's, and Ragsdale's (Colorado City) lists to guide me, I have thought it best to make no remarks about them. Whilst having no new species or varieties to describe, my list considerably extends the range of the species named, while others are frequently first records for Texas, as the Western Goshawk, Wright's Flycatcher, Woodhouse's Jay, Black-chinned Hummer (?), Townsend's Warbler (?), and Lewis's Woodpecker.

I am under great obligations to Mr. Everett Smith, who first kindly aided me in my efforts to locate birds of this district, and later to Mr. Ridgway, whose time I am afraid I have considerably imposed upon by my frequent questions as to the status of species

here and elsewhere, and for the last three years to Prof. W. W. Cooke, who has revised my names frequently and given me every assistance in his power in preparing my list. Lastly to Mr. John A. Loomis, of Silvercliff Rancho, I am indebted for much assistance in my later work in Concho County, and who has been able to extend my list considerably, especially among the Game Birds and Raptors, as will be noted in connection with various birds mentioned in the list.

The arrangement and nomenclature is that of the A. O. U. Check-List.

1. *Podilymbus podiceps*. PIED-BILLED GREBE.—Tolerably common in winter.
2. *Urinator imber*. LOON.—Two seen in the winter of 1880.
3. *Hydrochelidon nigra surinamensis*. BLACK TERN.—Tolerably common during the fall migration.
4. *Anhinga anhinga*. ANHINGA.—Tolerably common during the fall migration on South Concho.
5. *Phalacrocorax dilophus floridanus*. DOUBLE-CRESTED CORMORANT.—One shot in the fall of 1880.
6. *Pelecanus erythrorhynchos*. WHITE PELICAN.—Rare in spring and fall.
7. *Merganser americanus*. AMERICAN MERGANSER.—Common in winter.
8. *Lophodytes cucullatus*. HOODED MERGANSER.—Common in winter.
9. *Anas boschas*. MALLARD.—Abundant in winter.
10. *Anas obscura*. BLACK DUCK.—Tolerably common in fall.
11. *Anas strepera*. GADWALL.—Abundant in early winter.
12. *Anas americana*. BALDPATE.—Tolerably common in winter.
13. *Anas carolinensis*. GREEN-WINGED TEAL.—Abundant during spring and fall; a few remain through the winter. Arrives earlier than other Ducks.
14. *Anas discors*. BLUE-WINGED TEAL.—Abundant during spring and fall; a few remain through the winter. Arrives with the last, earlier than other Ducks.
15. *Anas cyanoptera*. CINNAMON TEAL.—Rare in fall.
16. *Spatula clypeata*. SHOVELLER.—Common during spring and fall.
17. *Dafila acuta*. PINTAIL.—Tolerably common in spring and fall. One female shot in June, 1881.
18. *Aix sponsa*. WOOD DUCK.—Migrant in fall; not observed in spring; winters on the Rio Llano.
19. *Aythya americana*. RED-HEAD.—Common in winter.
20. *Aythya vallisneria*. CANVAS-BACK.—Tolerably common in early winter.
21. *Aythya affinis*. LITTLE SCAUP DUCK.—Tolerably common in winter.

22. *Aythya collaris*. RING-NECKED DUCK.—Common in Concho County; some observed in Tom Green County.
23. *Charitonetta albeola*. BUFFLE-HEAD.—Rare; shot in the spring of 1886, in Concho County by Mr. Loomis.
24. *Erismatura rubida*. RUDDY DUCK.—Rare; seen only during spring migration.
25. *Chen hyperborea*. LESSER SNOW GOOSE.—Tolerably common during the spring migration.
26. *Anser albifrons gambeli*. AMERICAN WHITE-FRONTED GOOSE.—Tolerably common in winter.
27. *Branta canadensis*. CANADA GOOSE.—Tolerably common in spring and fall.
28. *Branta nigricans*. BLACK BRANT.—Rare. Shot only in Tom Green County in the winter of 1884.
29. *Dendrocygna autumnalis*. BLACK-BELLIED TREE-DUCK.—Rare in fall on South Concho.
30. *Dendrocygna fulva*. FULVOUS TREE-DUCK.—Tolerably common during the winter of 1884, on the North Concho.
31. *Olor buccinator*. TRUMPETER SWAN.—Tolerably common in winter.
32. *Phœnicopterus ruber*. FLAMINGO.—Accidental visitor in August, 1881, and July, 1882.
33. *Botaurus lentiginosus*. BITTERN.—Common fall migrant.
34. *Botaurus exilis*. LEAST BITTERN.—Common fall migrant.
35. *Ardea herodias*. GREAT BLUE HERON.—Resident; breeds, but nest not found.
36. *Ardea candidissima*. SNOWY HERON.—Resident; breeds, but nest not found.
37. *Ardea cœrulea*. LITTLE HERON.—Resident; breeds, but nest not found. An abundant fall migrant.
38. *Grus americanus*. WHOOPING CRANE.—Rare spring and fall migrant.
39. *Grus mexicana*. SANDHILL CRANE.—Abundant spring and fall migrant.
40. *Porzana carolina*. SORA RAIL.—Rare spring migrant; abundant in fall.
41. *Fulica americana*. COOT.—Common for nine months of the year, and possibly breeds, as I have seen them in June and July.
42. *Phalaropus tricolor*. WILSON'S PHALAROPE.—Tolerably common spring migrant; not found in the fall.
43. *Recurvirostra americana*. AVOCET.—Common fall migrant.
44. *Philohela minor*. AMERICAN WOODCOCK.—Rare in fall and winter on Middle Concho River.
45. *Gallinago delicata*. WILSON'S SNIPE.—Common. Seen every month in the year. No nests or eggs found.
46. *Macrorhamphus griseus*. DOWITCHER.—Tolerably common in the fall. Arrives early in September.

47. *Micropalama himantopus*. STILT SANDPIPER.—Common in fall; arrives September 3 to 5. Rare in spring.

48. *Tringa maculata*. PICTORAL SANDPIPER.—Common spring and fall migrant; arrives in spring April 27 to 29; in fall in September.

49. *Tringa bairdii*. BAIRD'S SANDPIPER.—Common spring and fall migrant, arriving in spring May 9 and 10, and in fall August 30, leaving about October 20.

50. *Tringa minutilla*. LEAST SANDPIPER.—Common in spring and fall; arriving in spring April 10 to May 12; and in fall from July 20 to October 1.

51. *Tringa alpina*. DUNLIN.—Only one observed; shot by Mr. Loomis on Kickapoo Creek, October, 1886.

52. *Ereunetes occidentalis*. WESTERN SANDPIPER.—Common in spring and fall, arriving in spring April 10 to May 12; in the fall from September 4 to October 20.

53. *Totanus melanoleucus*. GREATER YELLOW LEGS.—Common in spring and fall, arriving August 30, some remaining through the winter.

54. *Totanus solitarius*. SOLITARY SANDPIPER.—Tolerably common from September 5 to 22; a few only remaining till October. Rarely noted in spring.

55. *Bartramia longicauda*. BARTRAMIAN SANDPIPER.—Abundant fall migrant, arriving the first week in July, and numerous until September 30. In spring tolerably common, arriving April 19.

56. *Tryngites subruficollis*. BUFF-BREASTED SANDPIPER.—One shot in a flock of Mountain Plover, August 31, 1886, by Mr. Chester Loomis.

57. *Actitis macularia*. SPOTTED SANDPIPER.—Abundant; a few stay to breed; no nests found.

58. *Numenius longirostris*. LONG-BILLED CURLEW.—Arrives August 7 to 12, and is frequently found in large flocks. Some remain to winter, and are again abundant in spring.

59. *Squatarola helvetica*. BLACK-BELLIED PLOVER.—One shot by Mr. Ridge Goodrum, August 31, 1886, is the only record for the district.

60. *Charadrius dominicus*. GOLDEN PLOVER.—All the birds of this species I have seen were shot by Mr. J. A. Loomis, who states that they are tolerably common in fall.

61. *Ægialitis vocifera*. KILLDEER.—Abundant resident. Found eggs March 9, 10, and April 24. In winter they take to the open prairie in flocks of six to ten.

62. *Ægialitis montana*. MOUNTAIN PLOVER.—Abundant migrant in spring and fall. Arrives in flocks August 31 (earliest date), and some remain to winter.

63. *Colinus virginianus texanus*. TEXAN BOB-WHITE.—Abundant resident. Raise two broods. Nest, a depression lined with dried grass at the roots of small bushes, generally 'algarita'. Eggs six to fifteen. Earliest clutch found May 6 (twelve eggs); latest August 10 (fourteen eggs). Range extends west to Pecos. In winter they frequently associate with the Blue Quail.

64. *Callipepla squamata*. SCALED PARTRIDGE.—Abundant resident. A depression under a bush, generally unlined, serves as a nest. I believe only one brood is raised here, as the latest clutch found was May 18 (15 eggs); earliest clutch April 26 (12 eggs). This notice, I believe, extends the range considerably to the eastward, as the bird is found as far east as the Colorado River. Locally known as the Blue Quail. Most abundant between Castle Mountains and Pecos River, in a sort of fine, loose, sandy soil.

65. *Cyrtonyx montezumæ*. MASSENA PARTRIDGE.—Resident in Tom Green County, on the plains near Castle Mountains, and east to within about 20 miles west of San Angelo, on Middle Concho. Also noted in Crockett and Edwards Counties, nearly due south. No nests found. Known as the Black Partridge. The new A. O. U. 'Code and Check-List' gives its habitat as Northwestern Texas, New Mexico, Arizona, and Northwestern Mexico. I have traced it as far south as a line east of Eagle Pass, in Nueces and Frio Cañons; so Western Texas may also be included.

66. *Tympanuchus pallidicinctus*. LESSER PRAIRIE HEN.—Winter visitor; seen in October and November in Concho County, and also in winter on Middle Concho in Tom Green County. Abundant near Colorado City on the Texas and Pacific Railroad. I believe this record extends the range to the south-west. Westward it was abundant to the foothills of the Davis Mountains. Said to have been driven from the Pan Handle counties by the numerous prairie fires.

67. *Meleagris gallopavo mexicana*. MEXICAN TURKEY.—Resident. Once very abundant on every creek, but now rarely to be met with. I flushed a hen from her nest—a depression in a patch of low bushes—May 29, 1882, containing eight eggs; but I have frequently heard of them further south with ten to fourteen eggs. Another brood was raised on a small rushy island in Brady Creek, in the eastern part of Concho County, the young running about June 1, 1883.

68. *Ectopistes migratorius*. PASSENGER PIGEON.—Though not observed in this immediate district, an immense roost was noted in the winter of 1881, near the head of Frio Cañon. The settlers informed me that they had been there all the winter, eating acorns on the hills, and passing and repassing morning and evening in myriads. It was about February 1, 1882, that I saw them.

69. *Zenaidura macroura*. MOURNING DOVE.—Abundant resident. In winter more local, but in large flocks, when they frequently change their roosting place, as a friend (Mr. Loomis) suggests, in consequence of being disturbed by the numerous Owls. He first noticed the fact by noting where they roosted, so as to shoot them as they came in, and returning three or four nights after they had altered their resting place, and did so again and again. They raise two if not three broods, as I found a nest containing two fresh eggs of this species the 20th September, 1886, the latest date I have recorded for any eggs. The earliest date is April 26. They frequently use old Mocking Bird's nests.

70. *Cathartes aura*. TURKEY VULTURE.—Arrives March 17 (earliest date recorded), and remains abundant through the summer, breeding in caves, but frequently on the bare edge of a bluff. Clutches found contain only two eggs (one, doubtful whether this or next, having three). First one found May 6; last one June 10. Leave in September.

After trying various experiments, I notice that although they may smell their prey finally, they often seize and devour it before it has time to smell. These Vultures, the Carrion Crows, and Ravens frequently line the trees or posts waiting for a sheep to die, if in an exposed place.

71. *Catharista atrata*. BLACK VULTURE.—Arrives March 10 to 20, and nearly equals the last in numbers. Breeds on bare rocks—June 13, 1884, two eggs.

72. *Elanus leucurus*. WHITE-TAILED KITE.—Rare fall visitor.

73. *Ictinia mississippiensis*. MISSISSIPPI KITE.—Common in fall, in flocks of two to ten. A few must breed, as I have noted them in all the summer months.

74. *Circus hudsonius*. MARSH HARRIER.—Abundant resident. No nests have been found referable without doubt to this species. A great pest to the poultry yard. I have seen them eating carrion. One at the present date (January, 1887), frequently eats the carcasses of birds I have skinned, standing on the ground for that purpose. Generally they fly off with their prey, but eat it on the ground. The Sharp-shinned Hawk turns the wire-fence barbs to account, and the Cooper's occasionally will join the Marsh Harrier in eating a fresh-skinned carcass.

75. *Accipiter velox*. SHARP-SHINNED HAWK.—Abundant in fall; less so in winter. An excessively bold Hawk. I have seen it fly away with a pullet as big or bigger than itself, so heavy that its legs dragged the ground.

76. *Accipiter cooperi*. COOPER'S HAWK.—Another pest of the poultry yard. One flying after some tame Pigeons flew with force through a window in the barn, and was picked up stunned. Abundant in fall; less so in winter.

77. *Accipiter atricapillus striatulus*. WESTERN GOSHAWK.—I shot a male that was digesting a Meadow Lark, in December, 1885, and saw its mate several times.

78. *Buteo borealis calurus*. WESTERN RED-TAIL.—Abundant resident. Breeds from April 22 to May 22. Full clutch, three eggs. Feeds on prairie-dogs, cotton-tails, jack rabbits, and occasionally brings a Scaled Quail to its young. The plumages vary greatly, some birds having very dark under-parts,—but I believe they are referable to this variety.

79. *Buteo lineatus*. RED-SHOULDERED HAWK.—Resident; rare. Breeds (May 10, 1882, three eggs). I have never seen them in winter, but my friend, Mr. Loomis, has several specimens shot by him in November and December, 1885.

80. *Buteo abbreviatus*. ZONE-TAILED HAWK.—Fall visitant. One noted September 10, 1884.

81. *Buteo albicaudatus*. WHITE-TAILED HAWK.—Fall and winter

visitor. I sent a description of this Hawk—seen often before and since—to Mr. Ridgway who says it probably is of this species.

82. *Buteo swainsoni*. SWAINSON'S HAWK.—Resident. Abundant in summer. Breeds in low trees in ravines, in wild china or hackberries, or on the top of bluffs in similar trees. Clutch, three eggs—later ones, strange to say, have only two. Thus nests found March 1, April 1, 4, and 6, had each three eggs, while nests found May 1, 2, and 20, had only two. The young are extremely handsome and seem to go through several changes of color, from light creamy to almost melanistic specimens. This, like the Red-tail, is clumsy, and unwary. It can, however, sail with great swiftness for several miles without flapping its wings. Goes in large flocks sometimes; one seen at Fort Davis, February, 1886, had 200 in it.

83. *Archibuteo ferrugineus*. FERRUGINEOUS ROUGH-LEG.—This species (abundant in winter) was first brought to my notice by Mr. Loomis, who has had great success in killing them in several phases of plumage. It may breed—a point to be ascertained shortly.

84. *Haliaeetus leucocephalus*. BALD EAGLE.—Abundant resident. Breeds, March to May. A couple were seen repairing a nest this Christmas, 1886, with cane stalks, and my informant says one bird is now sitting. The nest is in a high pecan, but others are found in mesquit, ten to fifteen feet high.

85. *Falco columbarius*. PIGEON HAWK.—Winter visitor. Common in Tom Green County, in 1883-84.

86. *Falco sparverius*. AMERICAN SPARROW HAWK.—Abundant resident. Nests in old Woodpecker holes in mesquit and live-oak. Nest with young found May 1, 1885; eggs found as late as July 1 (1884). Clutch, seven to eight. A flock of about fifty observed in September, 1885, in Concho County.

87. *Polyborus cheriway*. AUDUBON'S CARACARA.—Resident in the eastern part of Concho County; a few visit the western half in fall; none seen in Tom Green County. Breeds. Nest found in live-oak, about eighteen feet from the ground, with three eggs, April 24, 1881. The same nest was used for two years after. Though in the southern part of Texas they prey on carrion, in Menard and Concho Counties they hunt prairie dogs in couples. Not at all alarmed (as yet) at the 'human form divine.'

88. *Pandion haliaëtus carolinensis*. AMERICAN OSPREY.—My authority for this as a fall visitor is Mr. Loomis, who noted one last fall (1885) on Kickapoo Creek.

89. *Strix pratricola*. AMERICAN BARN OWL.—Resident; rare; breeds. No nest found, but young met with in San Angelo, July, 1885. Seen in Concho County, in August, 1885. Known as the Monkey Owl, or Monkey-faced Owl.

90. *Asio wilsonianus*. AMERICAN LONG-EARED OWL.—Two specimens shot in the fall of 1886, and others noted.

91. *Asio accipitrinus*. SHORT-EARED OWL.—Tolerably common in fall; rare in spring.

92. *Syrnium nebulosum*. BARRED OWL.—Seems to be common on the

main streams, but, like nearly all other Owls, is far oftener heard than seen. No nests found, but undoubtedly a resident. May be var. *alleni*.

93. *Megascops asio mccallii*. TEXAN SCREECH OWL.—Abundant, at least in winter, on the river. Their notes can be heard from September 10 until March 10.

94. *Bubo virginianus subarcticus*. WESTERN HORNED OWL.—Abundant resident. Breeds from February 20 to end of May, in hackberry or mesquit on prairies, and in holes in the large pecans on rivers. I have rarely found more than two eggs in one clutch; three, however, occur in about one nest in six. Feeds on poultry, skunks, and rabbits, and is often on wing during the day. The birds seem to grow lighter with age.

95. *Speotyto cunicularia hypogæa*. BURROWING OWL.—Abundant resident. Breeds from April 1 to May 10, in old deserted dog-holes. Fly by day as well as night. I have found remains of Bell's Vireo, Savanna Sparrow, and other birds in their holes. In winter they hibernate, going in according to the severity of the weather. They appear just before the first migrants. I have noted them for several years, retiring December 1 to 10, and appearing March 1 or 2.

96. *Crotophaga sulcirostris*. GROOVE-BILLED ANI.—Fall visitor. One was shot by Mr. Loomis in October, 1885. I saw several, but did not procure any, in October, 1886. This record extends the range of this species considerably to the north, Mr. Sennett recording it for the Lower Rio Grande.

97. *Geococcyx californianus*. ROAD-RUNNER.—Abundant resident. Breeds from March 30 to May 10. Nest a huge structure in the middle of a bush, in thickets or dry ravines. Clutches number four, seven, six, five, five, eight, nine; average six.

98. *Coccyzus americanus*. YELLOW-BILLED CUCKOO.—Abundant in summer. Arrives first week in May; departs middle of September. My notes for 1884, 1885, 1886, respectively, give September 14, September 15, September 14, as latest records. First nest found June 2; last, July 30. Full clutches four-five. Nests in low hackberries, or high pecans. The nest is a very flimsy structure, of about twenty straws crossed, and so poorly put together that after a high wind eggs of both this bird and the Mourning Dove are frequently found on the ground, in pieces.

99. *Coccyzus erythrophthalmus*. BLACK-BILLED CUCKOO.—Spring and fall migrant. Not found west of Concho County.

100. *Ceryle alcyon*. BELTED KINGFISHER.—Abundant resident. Found in spring in small flocks. No nests found.

101. *Ceryle cabanisi*. TEXAN KINGFISHER.—Not detected on Pecos or Concho Rivers. Found in Nueces and Frio Cañons, in Edwards County. In the latter cañon in company with the Belted Kingfisher.

102. *Dryobates pubescens*. DOWNY WOODPECKER.—One shot on Middle Concho, in Tom Green County, January 1883.

103. *Dryobates scalaris*. TEXAN WOODPECKER.—Abundant resident. Breeds April 16 to May 28.

104. *Sphyrapicus thyroideus*. WILLIAMSON'S SAPSUCKER.—Irregular winter visitant. Tolerably common during the winter of 1883. Like all migrating Woodpeckers here, they are very local and may be common in places overlooked by me. Found on North Concho, and also in Nueces Cañon, in Uvalde County.

105. *Melanerpes erythrocephalus*. RED-HEADED WOODPECKER.—Irregular visitant. One shot August, 1885, and another seen but not secured. Only noted on Kickapoo Creek.

106. *Melanerpes torquatus*. LEWIS'S WOODPECKER.—Winter visitor, to the heads of creeks that rise in the plains. Tolerably common on Spring Creek. This record considerably extends the range of this species southward, and is the first (undoubted) notice for Texas.

107. *Melanerpes carolinus*. RED-BELLIED WOODPECKER.—Tolerably common winter resident on Main Concho.

108. *Melanerpes aurifrons*. YELLOW-NAPE WOODPECKER.—Abundant resident. Breeds in holes in mesquit, pecan, and live-oak, from April 10 to May 14. Clutch six. I have traced this bird west to the Castle Mountains, near Pecos River, in Tom Green County, and north to line of Texas and Pacific Railroad, so its range is considerably extended from that given in the A. O. U. 'Check-List,' which merely gives Southern Texas, etc. None found west of Pecos River.

109. *Colaptes auratus*. FLICKER.—Winter visitor. Tolerably common, but excessively wild.

110. *Colaptes cafer*. RED-SHAFTED FLICKER.—Winter visitor. More common than the last and less wild. I have found it due south as far as Frio Cañon, in Uvalde County. Arrives in fall from September 20 to October 6. Latest seen April 17.

Intermediate or 'hybrid' specimens between this species and the last occur in winter.

111. *Antrostomus vociferus*. WHIP-POOR-WILL.—Summer resident. Found only in the eastern part of Concho County.

112. *Phalænoptilus nuttalli*. POOR-WILL.—Abundant summer visitor. First seen in 1884, March 6; in 1885, March 20. Last seen in 1884, November 23; in 1885, October 8. Breeds, and I have undoubtedly found eggs, but stupidly thinking they should be speckled, I thought they were Dove's and left them. Its note is easily imitated. Midnight is their favorite hour on moonlight nights. They lie close in shubbery during the day, or on open flats, and are not easily flushed. Mr. Loomis last year told me they rested on limbs of trees on the creek during the day, to test which statement I went with him and we flushed several as stated.

113. *Chordeiles texensis*. TEXAN NIGHTHAWK.—Abundant summer visitor. Arrives last week in April, in flocks, and at once mate. Raise two broods, and breed on little gravelly ridges on bare ground. Clutch always two. Eggs found May 14, 29, 30, June 1, 30, and July 4. Departs first week in October.

114. *Trochilus colubris*. RUBY-THROATED HUMMINGBIRD.—Abundant summer visitor, arriving April 10-11. I have noted nests only in May, but

it must breed earlier. In fall (September) the eastern migrants are abundant for a week in Concho County; not detected in Tom Green County.

115. *Trochilus alexandri*. BLACK-CHINNED HUMMINGBIRD.—Abundant summer visitor. Males arrive April 1; common April 7. Seen in flocks during the fall migration (September 21 to 28). Raise two broods. Nests found from May 12 to July 2.

Mr Nathan C. Browne first added this species to the Texas avi-fauna; he found it at Boerne, and surmised that it bred to the north of that place, so its range is thus much extended beyond its previously known habitat, *i. e.*, "Pacific coast region, from California east to Arizona, and Utah, and southward."

116. *Milvulus forficatus*. SCISSOR-TAILED FLYCATCHER.—Abundant summer visitor. Earliest arrival March 14; not common until ten days later. Departs, main body, about October 20; a few linger till the first severe norther. Breeds commonly on prairies in mesquit thickets, but often in high pecans. First nest May 6, clutch 5; latest July 16, clutch 5. In ten nests examined only one clutch was 4.

117. *Tyrannus tyrannus*. KINGBIRD.—Fall visitant. Two recorded in fall of 1886.

118. *Tyrannus verticalis*. ARKANSAS KINGBIRD.—Spring migrant. I noted a pair June 1, 1885, in Tom Green County, which had evidently stayed to breed.

119. *Myiarchus crinitus*. GREAT-CRESTED FLYCATCHER.—Summer visitant. Arrives May 31 (probably before); breeds. Nest found in a hole in a mesquit, June 8, 1884; five eggs. Very abundant migrant during September.

120. *Myiarchus cinerascens*. ASH-THROATED FLYCATCHER.—Abundant summer visitor. Arrives the day after or same day as the Scissor-tailed Flycatcher, *i. e.*, after the first cloudy weather in middle of March. Departs a month before the Scissor-tail, but one or two linger for a fortnight after the bulk go. Last seen October 7. Breeds in holes of trees—generally in old Texas Sapsucker holes— and clutches range from 4 to 7; ordinary clutch 6. First clutch found May 9; last, June 9.

121. *Sayornis phœbe*. PHŒBE.—Resident; rare in summer and winter; common in fall. Nests on rocky ledges in caves; clutch 4 to 6. First nest found April 4; last, May 4. Does not winter in Tom Green County.

122. *Sayornis saya*. SAY'S PHŒBE.—Tolerably common winter resident. First arrival, October 10; departs April 13. Ranges east as far as the Colorado River, Texas.

123. *Sayornis nigricans*. BLACK PHŒBE.—Rare summer visitor. Found only in Tom Green County, on Spring Creek. Arrives end of March. Breeds April 4; one clutch found, 6 eggs; nest on a ledge.

124. *Contopus borealis*. OLIVE-SIDED FLYCATCHER.—Fall migrant; tolerably common in September. Not observed in spring.

125. *Contopus virens*. WOOD PEWEE.—Summer visitor. Not observed until May 5; last seen October 21. Tolerably common on South Concho, in Tom Green County, where it breeds. No nests were found, but young

were shot in June. Common in Concho County for two months in the fall.

126. *Contopus richardsonii*. WESTERN WOOD PEWEE.—Two shot in fall of 1886, in Concho County.

127. *Empidonax pusillus*. LITTLE FLYCATCHER.—Tolerably common summer visitant. Breeds. Young shot.

128. *Empidonax pusillus trailli*. TRAILL'S FLYCATCHER.—Spring migrant in the western half of Concho County, and I believe it breeds—a point I thought I had already ascertained, but as there may be some doubt, I cannot positively record it yet as breeding.

129. *Empidonax minimus*. LEAST FLYCATCHER.—Tolerably common summer visitant. Abundant in fall. Have shot young; no nests taken. Arrival noted April 27, 1885.

130. *Empidonax hammondi*. HAMMOND'S FLYCATCHER.—Fall migrant. Rare in Concho County; tolerably common in Tom Green County and the most abundant *Empidonax* across the Pecos River.

131. *Empidonax obscurus*. WRIGHT'S FLYCATCHER.—Rare fall migrant. Secured twice in Tom Green County.

132. *Otocoris alpestris arenicola*. DESERT HORNED LARK.—Abundant winter visitor. Arrives October 20; departs March 6. This is the only Horned Lark noted for either county. None occur in summer to my knowledge, although I have looked especially for them.

(*To be continued.*)

THE RED-HEADED WOODPECKER A HOARDER.

BY O. P. HAY.

THE Woodpeckers are eminently an insect-eating family, and their whole organization fits them for gaining access to situations where the supply of their normal food is perennial, if not always abundant. There are, however, in all probability, few members of the group that will not, when opportunities are offered, forego their accustomed animal diet and solace themselves on soft fruits and luscious berries; and when the blasts blow cold, and the soggy limb is frozen hard, and the larva no longer betrays its location by its industry, the few Woodpeckers of the species which brave our winters are, no doubt, glad to avail themselves of such dry forms of nutriment as grains, seeds of grasses, and the softer nuts.

Notwithstanding the many sagacious traits exhibited by birds, it is, to judge from the books, rather unusual for them to lay up

a store of food for a period of scarcity ; and yet it is probable that when we have thoroughly learned their modes of life many will be found to do this. One Woodpecker, *Melanerpes formicivorus*, a near relative of our Red-headed Woodpecker, has long been known as a hoarder of treasures, and an interesting account of its habits is given in Baird, Brewer and Ridgway's 'Birds of North America.' This species is accustomed to dig small holes in the trunks of trees, and to drive into each hole with great force a single acorn. "Thus the bark of a large pine forty or fifty feet high will present the appearance of being closely studded with brass nails, the heads only being visible." It has, by some, been denied that these acorns are collected for food ; and it is quite probable that many more are stored away than are ever eaten. It is even related that these birds sometimes hide away in trees collections of small stones. But there are evidences that sometimes, at least, the acorns are utilized. Instinct probably leads the bird to overdo the business of hoarding, just as human reason in a similar direction often misleads its possessors.

Our Red-headed Woodpecker betrays its kinship to the California species by the possession of somewhat similar habits. Its propensity for hoarding does not appear to have escaped the observation of many persons who make no claims to being ornithologists, and yet I find in no scientific work that I have been able to consult any notice thereof. Gentry, who describes minutely the habits of this species, says nothing about this trait. 'The Birds of North America' contains no statement concerning the food of the species ; and concerning the hoarding habits of the California Woodpecker they are spoken of as being "very remarkable and, for a Woodpecker, somewhat anomalous."

Along with the great abundance of grains and fruits of the past year, there has been, in Central Indiana at least, an immense crop of beech-nuts ; and the Red-heads have appeared to be animated with an ambition to make the most of their opportunities. From the time the nuts began to ripen, these birds appeared to be almost constantly on the wing, passing from the beeches to some place of deposit. They have hidden away the nuts in almost every conceivable situation. Many have been placed in cavities in partially decayed trees ; and the felling of an old beech is certain to provide a little feast for a bevy of children. Large handfuls have been taken from a single knot-

hole. They are often found under a patch of the raised bark of trees, and single nuts have been driven into the cracks in bark. They have been thrust into the cracks in front gate-posts: and a favorite place of deposit is behind long slivers on fence-posts. I have taken a good handful from a single such crevice. That sharpest of all observers, the small boy, early discovered the location of these treasures. In a few cases grains of corn have been mixed with beech-nuts, and I have found also a few drupes apparently of the wild-cherry and a partially-eaten bitter-nut. The nuts may often be seen driven into the cracks at the ends of railroad ties; and, on the other hand, the birds have often been seen on the roofs of houses, pounding nuts into the crevices between the shingles. In several instances I have observed that the space formed by a board springing away from a fence-post, has been nearly filled with nuts, and afterwards pieces of bark and wood have been brought and driven down over the nuts as if to hide them from poachers. These pieces of bark are sometimes an inch or more square and half an inch thick and driven in with such force that it is difficult to get them out. In one case the nuts were covered over with a layer of empty involucre.

Usually the nuts are still covered with the hulls; but here and there, where the crevice is very narrow, these have been taken off and pieces of the kernels have been thrust in. An examination recently of some of these *caches* showed that the nuts were being attacked by animals of some kind. The Red-heads are frequently seen in the vicinity of these stores and they sometimes manifest great impatience at the presence of other birds. That other birds and animals of any kind disturb these *caches* I do not know, but it is quite probable that they do.

Since it might be questioned whether or not the Woodpeckers use for food the nuts thus stored up, I concluded to apply a test that would probably decide the matter. To-day (Jan. 7.), after the prevalence for sometime of severe weather, I shot two Red-heads and made an examination of the contents of their alimentary canal. In the gizzards of both were found considerable quantities of the more or less broken kernels of what appeared to the unaided eye to be beech-nuts. I then made microscopic sections of the pieces and compared them with similar sections of beech-nuts, and the two sets of sections were identical. The Red-headed Woodpecker certainly eats beech-nuts. In the giz-

zards there was also some kind of hard vegetable matter that I could not determine, and some coarse sand; but there were no remains of insects.

The laying up of such abundant stores of food for winter use, in so many places easy of access, and the precautions taken to conceal them, all show a high degree of intelligence in these birds.

The above observations were made in the village of Irvington, near Indianapolis, Ind.

ON THE AVI-FAUNA OF PINAL COUNTY, WITH
REMARKS ON SOME BIRDS OF PIMA AND
GILA COUNTIES, ARIZONA.

BY W. E. D. SCOTT.

With annotations by J. A. Allen.

(Continued from p. 24.)

137. *Coccothraustes vespertina*. EVENING GROSBEEK.—The only locality at which I met with this species was in the pine wood region of the Santa Catalina Mountains, November 26-29, 1884, as already noted. (See *Auk*, Vol. II, No. 2, p. 174, April, 1885.)

138. *Carpodacus purpureus californicus*. CALIFORNIA PURPLE FINCH.—During several years of collecting in the region under consideration, this species was not met with; and, therefore, I must assume that it is not of regular occurrence. But during the fall of 1885, beginning early in November, I found large flocks in the cañon near my house in the Catalinas. The first flock, noticed on November 11, was, as far as could be ascertained, composed of birds in immature plumage and mostly females. On November 30, I took a male in full plumage, the first I had noticed. All through December and January they were common in both phases of plumage, but a perceptible diminution of adult males was noticed early in February. About the middle of February the species began to disappear. This is the only point where I have noticed their occurrence. They fed almost exclusively on the ripe seed-balls of the sycamore, this season very abundant.

[Among the birds received from Mr. Scott are 12 adult males, 5 young males in the plumage of the female, and 18 females. These appear to differ in no appreciable way from California examples. Mr. Scott's

record, as above, is the first for the Southern Rocky Mountain region. As he suggests, their appearance there is doubtless unusual, and doubtless to be considered as a temporary incursion from the Pacific coast region.—J. A. A.

139. *Carpodacus cassini*. CASSIN'S PURPLE FINCH.—The first records I have of this species were made in the pine region of the Catalinas late in November, 1884. (See Auk, Vol. II, p. 173.) Later in the same year they were present near my house, feeding on the young buds of cottonwood. My notes speak of them as not uncommon through February and March at this point, females and immature birds largely predominating. The latest note of 1885 is on April 27, when, at the same locality, a single one was seen and taken, moulting. I did not meet with them in the mountains afterward, but saw a large flock, many in adult plumage, at Tucson, February 19, 1886.

140. *Carpodacus frontalis*. HOUSE FINCH.—An abundant summer resident, breeding both about Tucson and in the Catalinas up to an altitude of about 6500 feet. They are present about Tucson in smaller numbers during the colder months. This is also true of the species in the lower foothills of the Catalinas, though here they are not nearly so common in winter as about Tucson. The regular migration brings them back to these mountains in large numbers late in February. At first they are in flocks of considerable size, but soon pair and by the third week in March begin nesting. The nesting site is usually in a cholla at no great distance from the ground. I have records of nests, however, sixty feet from the ground in sycamores, and in almost every variety of bush and tree.

141. *Loxia curvirostra stricklandi*. MEXICAN CROSSBILL.—During my visit to the Catalinas in November, 1884, I did not meet with any Crossbills, though careful search was made. But on a subsequent visit to the same locality, November 3-8, 1885, I found the species abundant and quite generally distributed throughout the pine woods. They fed almost exclusively on the seeds of the pine and seemed to affect the vicinity of streams or brooks, constantly going to drink. Now and then I noticed single birds alight on the ground, apparently in search of seeds that had been dropped.

[Fifteen specimens were sent to me by Mr. Scott. They were forwarded to Mr. Brewster for examination in connection with Professor Dyche's specimens obtained at Lawrence, Kansas, and form a part of the Arizona material referred to by Mr. Brewster in his note to Professor Dyche's paper published in 'The Auk,' Vol. III, pp. 260-261.—J. A. A.]

142. *Spinus tristis*. AMERICAN GOLDFINCH.—My records of this species are very limited and were all made near my house in the Catalinas. They are as follows:

December 19, 1885. Flock of three, two males and a female: all adult and in winter plumage. December 30, 1885. Took two adults,—all that were seen. February 4, 1886. Took a single female.

So far as I am aware, Mr. Brown has not found this species about Tuc-

son. All the individuals that I have seen were feeding on the ripe seed ball of the sycamore.

[Six specimens in winter plumage are strikingly different from the eastern bird in corresponding plumage. The white edging of the feathers of the wings and tail in the Arizona bird is much broader; the dorsal surface is much lighter, the yellow of the throat is much purer, lacking almost wholly the greenish shade seen in the eastern bird; the white of the belly is purer, with a faint fulvous instead of grayish shade; the sides are washed with a paler shade of fulvous brown, in quite strong contrast, however, with the almost pure, solid white of the abdomen and lower tail-coverts. If summer specimens should show correspondingly paler tints in comparison with eastern examples, as they are almost sure to do, the Arizona form is quite as well entitled to recognition as a subspecies as are several of the pallid forms of Sparrows which have been accorded this rank.—J. A. A.]

143. *Spinus psaltria*. ARKANSAS GOLDFINCH.—This species, as well as its close ally, *Spinus psaltria arizonæ*, seems in the Catalina region to be rather nomadic and never very common. The following records from my note book will show the manner of their occurrence: Pepper Sauce Cañon, Catalina Mountains, September 16, 1884. One taken, No. 893, an adult male. The testes in this individual were fully as large as in the height of the breeding season. The birds are rather common. Several seen to-day. Same locality, January 12, 1885. Noted; rare. Same locality, March 19, 1885. No. 1916, male; has the testicles as fully developed as in the breeding season. Same locality, April 16, 1885. Pair taken (No. 2172, male; No. 2173, female), apparently mated. On dissection both proved to be adult, though the male is not in full plumage. Probably *psaltria*. They were about to breed, as the testicles of the male were fully developed and the eggs of the female were, some of them at least, half formed and would have been laid at an early day. Same locality, February 10, 1886. Male in full plumage taken, the first seen in two months. The only one noted; feeding on cottonwood flowers. Same locality, July 18, 1884. A number of young seen to-day, fully fledged and no longer with parents. No. 567, young male taken. Same locality, May 5, 1885, No. 2418, female, young of year.

I have been unable to find the nest of this species and am puzzled as to its exact breeding habits, especially with regard to time of year, but a careful consideration of the above notes leads me to believe that the period of breeding extends over a considerable portion of the year.

144. *Spinus psaltria arizonæ*. ARIZONA GOLDFINCH.—This subspecies is much more uncommon in the Catalinas—the only point where I have met with it—than the foregoing. Indeed, I find it difficult to distinguish the transition from true *psaltria* to this form, and again from this form to *Spinus psaltria mexicanus*. Alone each seems distinct. A series placed together renders it doubtful where to draw the dividing lines. All of the examples that I can refer to this subspecies were taken near my house in the Catalinas, as follows:

No. 68, ♂ *ad.* June 13, 1884. Is very dark and intense in color, forming a near approach to *mexicanus*. No. 2663, ♂, May 28, 1885. Typical *arizonæ*. No. 2566, ♂, May 19, 1885. Typical *arizonæ*. This very meagre material is all that has come under my immediate notice.

145. *Spinus lawrencei*. LAWRENCE'S GOLDFINCH.—This species I have not met with, but a female was taken by Mr. Herbert Brown on February 28, 1886, to which he kindly called my attention soon after its capture. Mr. Brown also saw the male bird but was unable to get it.

146. *Spinus pinus*. PINE FINCH.—A rather common, and at times an abundant fall and winter visitor in the Catalina Region, ranging as low as an altitude of 3500 feet. The first fall record I have is October 28, and I have seen them as late as April 16. This was in the vicinity of my house, at an altitude of about 4500 feet. During the winter of 1885-86 this species was associated with flocks of *Carpodacus purpureus californicus*, feeding on the fruit of the sycamore, and was rather common all through the season.

[The considerable number of specimens of this species sent by Mr. Scott, are uniformly somewhat lighter colored than eastern examples, but the difference is much less than that noticed above as occurring between eastern and western specimens of *Spinus tristis*.—J. A. A.]

147. *Calcarius ornatus*. CHESTNUT-COLORED LONGSPUR.—On the mesas of the foothills of the Santa Catalinas, near American Flag (altitude about 3500 feet), I took a single individual of this species, and saw a large flock on November 11, 1885. These are the only times that it was met with.

148. *Pooecætes gramineus confinis*. WESTERN VESPER SPARROW.—In general a fall and spring migrant in the Catalina region, which is the only point at which I have notes of their occurrence. During these seasons they are quite common, and a few winter in the same locality. I saw a small flock and took a male (No. 1635) in Mesquite Cañon, altitude 3500 feet, January 24, 1885. On March 12, 1885, there were many everywhere on the mesas of the Catalina foothills.

149. *Ammodramus sandwichensis alaudinus*. WESTERN SAVANNA SPARROW.—Mr. Brown informs me of the occurrence of this species, rather sparingly, about Tucson in fall, winter, and spring. I have not met with it myself.

[I have received from Mr. Brown a specimen taken in the Rincon Mountains, Arizona, May 8, 1886.—J. A. A.]

150. *Ammodramus savannarum perpallidus*. WESTERN GRASSHOPPER SPARROW.—Apparently a rather uncommon resident on the mesas of the foothills of the Catalinas. The following are all the references to it contained in my note book: Hills above Old Hat Cañon, altitude 3750 feet, January 29, 1885. Took an adult female (No. 1682); saw no others, but observed another on January 24 in Mesquite Cañon, at a somewhat lower altitude. Both of these were found in thickets of cat-claw mesquite and *not* in a grassy region. Same locality, March 22, 1885. Took a female (No. 1946), the only one seen.

151. *Chondestes grammacus strigatus*. WESTERN LARK SPARROW.

—Though resident about Tucson, and at the lower altitudes of the region under consideration, they are common in the Catalina region, where they range up to about 5000 feet, only during the warmer months, and I have not met with them at all in the winter. A few were noted in the hills above Old Hat Cañon on May 11, 1885, the first of the season. They breed in this locality, and though I have found no nests, I have taken the young fully fledged in the first plumage.

152. *Zonotrichia leucophrys*. WHITE-CROWNED SPARROW.—This species, in comparison with the next, is apparently rare. I have met with it in September, February, and May, in small numbers, associated with the next.

153. *Zonotrichia intermedia*. INTERMEDIATE SPARROW.—Observed from the last week of September till late in May. The greater part seen in September were in immature plumage.

154. *Spizella socialis arizonæ*. WESTERN CHIPPING SPARROW.—My notes in regard to this form are all from the Catalina region. They indicate that the species is rare in summer, and abundant during the fall, winter, and spring. Mr. Brown has found it common about Tucson in winter. In the Catalinas the birds seem to frequent the bottoms of the wider cañons, feeding on seeds of various grasses, and congregating in large flocks, sometimes numbering several hundred individuals. In March they begin to take on the spring plumage.

[The series of 46 specimens of this form sent by Mr. Scott are mostly in winter plumage, but the considerable number of spring specimens well sustains Mr. Brewster's remarks (Bull. Nutt. Orn. Club, Vol. VIII, pp. 190-191) respecting the differences that may be regarded as characteristic of the western race of *S. socialis*.—J. A. A.]

155. *Spizella pallida*. CLAY-COLORED SPARROW.—I have met with this species only at Mineral Creek, in October and November, and in March.

156. *Spizella atrigularis*. BLACK-CHINNED SPARROW.—Apparently a very rare species throughout the area under consideration. I met with it at the head waters of Mineral Creek on several occasions in October, 1882, and once in the Catalina region, Feb. 26, 1885.

157. *Junco hyemalis*. SLATE-COLORED JUNCO.—A rare species, though of regular occurrence in the Catalina region, which is the only point where I have met with it. I took a male (No. 1576) in Old Hat Cañon, Jan. 8, 1885, the only one seen. It was associated with a large flock of other Juncos, the prevailing form being *J. hyemalis oregonus*. I also took a male Feb. 10, and a female Feb. 11, 1886, near my house.

[The two specimens sent are quite indistinguishable from eastern examples.—J. A. A.]

157*a*. *Junco hyemalis oregonus*. OREGON JUNCO.—The commonest form of Junco in the Catalinas during the colder months. They arrive about the last of October and remain till about April 1.

158. *Junco annectens*. PINK-SIDED JUNCO.—This does not seem a very common form in the Catalinas, the only point where I have observed

it, but the specimens obtained seem to be very characteristic. I generally found it associated with *oregonus*, but have seen small flocks of this species alone, notably in the pines of the Catalinas, altitude 10,000 feet, from November 3 to 8 inclusive, 1885. They were rather common in Pepper Sauce Cañon during the later part of February, 1886, but I did not detect their presence in the pine region above alluded to in April, 1885.

159. *Junco caniceps*. GRAY-HEADED JUNCO.—Next to *oregonus*, this is probably the more common form of Junco, in the foothill region of the Catalinas during the colder weather. My notes indicate that it arrived about my house in the Catalinas October 15, 1884, and became common in a few days. It was abundant in the pine region during my visit, from November 26 to 29, 1884. During January and February, 1885, I saw it almost daily near my house, and late in the latter month noted it as particularly abundant. It was, however, uncommon during the winter of 1885 and 1886 in the same locality. I have taken this form later in the spring, at and about my house, than any of the other Juncos, but did not find it in the pines of the Catalinas in April.

160. *Junco cinereus palliatus*. ARIZONA JUNCO.—I have discussed the occurrence of this species in the pine woods of the Catalinas in a former number of this journal (*Auk*, Vol. II, pp. 174, 354-355), where it is referred to as *Junco cinereus*. It remains to be added that I also found it in the pine forests of the Pinal Mountains, above Mineral Creek, where it was apparently rare. This was late in October, 1882. In the cañons of the foothills of the Catalinas, and about my house, it is the earliest form to appear in the fall, and a few remain during mild winters. But during the winter of 1885-86, which was severe, I only detected it on a single occasion, February 10, 1886.

160a. *Junco cinereus dorsalis*. RED-BACKED JUNCO.—Two Juncos taken in the Catalinas near my house are fairly referable to this form, though No. 1522, a male, had the bright colored sides of the ♀. *cinereus palliatus*. The following are the records of the two birds in question taken from my note book: Pepper Sauce Cañon, Catalinas, January, 1885, altitude 4500 feet. Took an adult male (No. 1522), which in color is typical of this subspecies, but with bright yellow irides. April 7, same locality, took a female (No. 2122).

[The very interesting series of Juncos in Mr. Scott's collection numbers 197 specimens, of which 2 are referable to *hyemalis*, 80 to *oregonus*, 27 to *annectens*, 35 to *caniceps*, 3 to *dorsalis*, and 50 to *palliatus*. These numbers may doubtless be taken as a fair index of the relative abundance of these forms in the region under consideration. The specimens referable to *oregonus* and *annectens* call for no special notice. About one-third of the *caniceps* series show more or less red on the crown, corresponding in tint to that of the back. In several it tinges, more or less strongly, fully one-half of the crown; in others it is restricted to a few well-defined streaks. That it is not a seasonal feature is shown by its presence in May specimens as well as in October ones. It is also traceable in a few specimens of *palliatus*. There is thus a tendency toward the development of a red crown in at least the *caniceps* form.]

Of the three specimens of *dorsalis* one has the bill wholly black and of exceptionally large size.

The *palliatu*s series presents much variation in respect to the extension of the red upon the secondaries and the wing-coverts, from those showing but a slight trace of it on these parts, and thus barely separable from *dorsalis*, to those having the greater coverts and inner secondaries as red as the back. In short, the intergradation between these two forms is shown to be complete by the specimens in Mr. Scott's series.

In early spring specimens of both *caniceps* and *palliatu*s, the red of the dorsal region is of a much lighter and brighter tone than in autumnal specimens.—J. A. A.]

161. *Amphispiza bilineata*. BLACK-THROATED SPARROW.—A common resident in the foothill region of the Catalinas, and also abundant about Tucson. It breeds commonly at both points, and generally at suitable elevations and localities throughout the region under consideration. In the Catalinas, up to an altitude of 4500 feet, it is rather more abundant in spring and fall than during the breeding season or in the winter. At this point the breeding season begins early in March, and continues well into the latter part of the summer. A male taken near my house, August 16, 1884, had the testes developed to fully as great an extent as at any time during the breeding period. The number of eggs varies from two to five, three or four being the general complement. The nests are built near the ground in some low bush or cactus, and occasionally on the ground. By the 1st to 10th of May in the Catalina region the first broods of young have left the nest and parent birds, and go about in small flocks of from five to twenty. The amount of black showing on the throats of young male birds varies greatly; in some it is hardly to be distinguished, while in others it is conspicuous, though not as brilliant as in the adult birds. There is every possible gradation between these two extremes; and young females often show traces of the black throat-marking.

The species is very familiar, and being so common, and having a pleasing song, it may fairly be considered as occupying about the same relative position in the Fringillide of the region that the familiar *Spizella socialis* does in the East.

[Mr. Scott's series of 58 specimens includes 18 in first plumage. They wholly lack the black of the throat and face, but the white superciliary and maxillary stripes are distinct; the whole dorsal surface is of a lighter, more ashy brown, and the feathers of the interscapular region are obscurely streaked centrally with dusky; throat whitish, often with faint touches or streaks of dusky; whole breast streaked with blackish, more or less heavily in different individuals; in some the streaks being narrow and indistinct, in others broad and heavy. The tail is less intensely black, the white edging of the outer webs and the white spot on the inner web of the outer feathers in the adult are usually wholly wanting; the latter is sometimes present, but much reduced in size.

Adults in the fall have the brown of the dorsal surface deeper than in spring and summer, but there is apparently no sexual difference in color.—J. A. A.]

162. *Amphispiza belli nevadensis*. BELL'S SPARROW.—This species is only mentioned once in my notes as occurring in the Catalina Mountains. This at an altitude of 5000 feet in late September, 1884. Mr. Herbert Brown considers it as not a common bird about Tucson in winter, where he obtained a male, November 2, 1884, and a female, December 28, 1884. I noticed quite a number on the low mesas near the San Pedro, November 22, 1884.

163. *Peucæa carpalis*. RUFIOUS-WINGED SPARROW.—In the foothills of the Catalinas this is at times, particularly in late fall and early spring, a common species. During the warmer months, though met with now and then, I cannot consider it as being common, and have been unable to find its nest. In this region, which is the only point where I have met it, it occurs from about 3000 up to 4500 feet, in flocks of from four to twenty individuals, and is not infrequently associated with *S. socialis arizonæ*, having very similar habits.

164. *Peucæa ruficeps boucardi*.—The bird is present in the Catalina region all the year, ranging more or less commonly down as low as 3000 feet in winter, and up into the pine woods during the warmer months. I met with it casually at Mineral Creek, where it was apparently rare. Mr. Brown has no records of it from about Tucson. The song is very pleasing, and the bird is quite tame and familiar, coming to feed on grain and crumbs daily about my house.

This species has been discussed quite fully in former papers of this journal (*Auk*, Vol. II, p. 354, and Vol. III, p. 83), to which the reader is referred for further details.

[Mr. Scott's series of 46 specimens, 40 of them adult, shows that among the latter there is much seasonal variation in color. In autumnal and winter specimens the yellowish brown wash of the lower surface is much stronger than in spring (April) specimens, this color becoming still paler in specimens taken in June. The brownish chestnut in fall and winter birds loses later its vinaceous or purplish tinge, becoming deep reddish brown in the breeding season, with the ashy bordering of the feathers more restricted. The bill also becomes darker. It is thus quite easy to recognize approximately the date of collecting, without reference to the label, from an inspection of either the dorsal or ventral surface of the specimen.

The young in first plumage have the feathers of the breast and flanks narrowly streaked with dusky, the streaks being most distinct on the breast. The general color of the lower parts differs little from that of the adult. Above the head, neck, and interseapular region are ashy brown, each feather broadly centered with dusky. The wings and tail are nearly as in the adult.—J. A. A.]

165. *Melospiza fasciata fallax*. DESERT-SONG SPARROW.—The only point where I have observed this species is in the immediate vicinity of Tucson, where it is apparently resident, though most common during the spring months, and where it breeds. Mr. Brown's observations coincide, I believe, with the above statement. I have no definite data in regard to time of nesting, but have heard the birds singing in late January. So

far as I am aware they are not so familiar about houses as the Song Sparrow of the East.

165 a. *Melospiza fasciata montana*. MOUNTAIN SONG SPARROW. — This form of Song Sparrow I noticed not uncommonly on the San Pedro River in January (26-29), 1886. I have also seen it in the vicinity of Tucson on two occasions, both in the winter. Mr. Brown has found it to be a rather irregular visitor and generally uncommon about Tucson during the winter.

166. *Melospiza lincolni*. LINCOLN'S SPARROW. — A regular, though not very common, spring and fall migrant in the Catalina Mountains, and a few probably winter in this locality.

167. *Pipilo maculatus megalonyx*. SPURRED TOWHEE. — A common resident in the Catalinas, where it breeds at altitudes above 5000 feet, and ranges, except in the severest portion of the year, to the highest points. Breeds in the vicinity of my house in May and June. Young, fully fledged in the streaked plumage, were taken about the middle of July. (For further reference to this form, see Auk, Vol. II, No. 4, p. 355.)

168. *Pipilo chlorurus*. GREEN-TAILED TOWHEE. — A common spring and fall migrant, and a few winter in the Catalina region. Most abundant in September and April. I met with it at Riverside and at Mineral Creek, and have also seen it about Tucson. I do not think it breeds within the region in question.

169. *Pipilo fuscus mesoleucus*. CAÑON TOWHEE. — A common resident throughout the entire region, and ranges up to the pine forests in the warmer months. The first nests were found in the Catalina region (altitude 3500 feet) about the middle of March, from which time the breeding period extends well into July.

[A young bird in first plumage lacks the chestnut crown-patch; the rump and upper tail-coverts are decidedly rufous, contrasting with the back; the wing-coverts are tipped with yellowish white, forming two narrow wing-bars; the throat, whole breast, and flanks are distinctly streaked with dusky. — J. A. A.]

170. *Pipilo aberti*. ABERT'S TOWHEE. — Occurs as a resident about Tucson and at Florence, which are the only points where I have personally observed it. It is by no means as common as the last, and does not, so far as I am aware, enter the foothills or range up into the mountains. The height of the breeding season about Tucson is in the latter part of May and early June.

171. *Cardinalis cardinalis superbus*. ARIZONA CARDINAL. — This form seems to have a very general distribution throughout the area treated of, ranging up to about 5000 feet in the mountains. It is perhaps most common in the foothills at an altitude of 3500, and is particularly conspicuous, both by its very brilliant plumage and clear, melodious song. This does not seem very different from that of the typical bird save that it has possibly greater volume. In the Catalinas I find them most common in cañons where there is considerable growth of juniper, and the same holds true at the point where I observed them on Mineral Creek.

172. *Pyrrhuloxia sinuata*. TEXAN CARDINAL. — Rare or casual in

the foothills of the Catalinas. I have observed it here on only two occasions. Rather common, especially in early spring, about Tucson. Mr. Brown found it commonly in the Quijitoa country in the winter of 1884 and 1885. I did not observe it at either Florence or at Riverside.

173. *Habia melanocephala*. BLACK-HEADED GROSBEEK. — At Mineral Creek, altitude 5000 feet, this species was breeding in small numbers during the summer of 1882. The only other point where I have met with it is in the Catalina Mountains, where it undoubtedly breeds at the highest altitudes, and where after the first of July it rapidly becomes abundant as low down as 3500 feet. Here I found it in large scattered flocks, during July, August, and September, 1884, feeding on all the small wild fruits and seeds that are abundant at this time of year. Its arrival at this same locality was first noted May 1, and it remains till about the first week in October.

I took a remarkably fine albino of this species on August 15, 1884, in Pepper Sauce Cañon, Catalina Mountains.

174. *Guiraca cærulea*. BLUE GROSBEEK. — The only records I have of this species are kindly furnished me by Mr. Brown, who finds it rather rare about Tucson late in May and early in June.

175. *Passerina amœna*. LAZULI BUNTING. — Observed at Mineral Creek in August, 1882. Took a young male (No. 624) in Pepper Sauce Cañon (4500 feet), July 27, 1884. These are the only records I have made of the species. Mr. Brown has found it breeding, but not common, about Tucson, where it is most frequent during the spring migration.

176. *Spiza americana*. DICKCISSEL. — The only record of this species is furnished by Mr. Herbert Brown, who took a female near Tucson on September 11, 1884, and later kindly showed me the bird in his collection.

177. *Calamospiza melanocorys*. LARK BUNTING. This species, if it does not breed within the area under consideration, is present almost the entire year and sometimes is to be met with in enormous flocks. I find in my notes large flocks noted near Florence, Dec. 10-20, 1883. On the mesa, above Pepper Sauce Cañon, Catalinas (altitude 4000 feet), I saw Aug. 17, 1885, two large flocks, composed of adult and young in about equal numbers, the adult males still in full plumage. A small flock was seen in Old Hat Cañon, Catalinas (4000 feet), on March 10, 1885 — first of the spring migration. A number of large flocks were noted on the plains about Tucson, Feb. 19, 1886.

(To be continued.)

RARE BIRDS OF NORTHEASTERN NEW BRUNSWICK.

BY PHILIP COX, JR.

BEFORE entering upon the subject of this paper, it is well to say something concerning the character and climate of this cor-

ner of the Dominion (Newcastle on the Miramichi River), as the reader will then be better able to appreciate the facts presented.

Snow falls here about November 1, and winter can be said to begin about the 20th of the month. Soon pond, lake, and river are ice-bound, and field and forest clad in their winter robes. The snowfall increases until about the middle of March, when it lies to the depth of from three to six feet; and during all this time the thermometer is hardly ever above zero. A temperature of from 15° to 30° below is often reached, and for weeks and weeks the average may be 18° ; but, strange to say, our climate does not *seem* severe, nor do our people complain of the cold. This is largely due to the surprising dryness of the air, and the absence of raw winds. Our days are bright, our nights, starry; the auroral displays are of surpassing grandeur, while the remarkable uniformity of the temperature is not the least striking feature of our climate.

About the 20th of March, the sun's increasing power begins to be felt, and the snow would henceforth waste away rapidly were it not for cold east winds which at this time begin to blow from off the floating ice-fields of the Gulf of St. Lawrence, and neutralize the action of the sun. Thus spring creeps on very slowly, or rather we have no spring at all, in the general meaning of the term; for it is frequently the 1st of May before our fields are bare, and then warm summer is upon us. Thus summer and winter meet, as it were, on friendly terms, shake hands, and get along tolerably well without the interference of a meddling third person. By the side of some ice-layer or snow-drift, the Mayflower, trillium, and other plants are often found in bloom, marking the sudden transition of climate.

In this latitude a cold winter generally presupposes a warm summer, but luckily for our country we are an exception to this rule; for no other locality, perhaps, in the Dominion of Canada can boast of such cool, refreshing weather as the shores of the Miramichi and far-famed Baie des Chaleurs. Of this fact our neighbors to the south and west are becoming aware; for thousands of them flock every summer to our little towns and villages to enjoy the delicious coolness and health luxuries of our seaside homes. And what visions of pleasure and happiness must they fondly recall after such a visit! Bright, sunny days, tem-

pered by gentle sea breezes, sweet, fresh and cool, like the fanning of unseen wings; a sun, wondrously large and red, rising from behind the sea, and as if cooled by its morning bath, lacking all day its usual "ardent frown"; a sky unflecked with a cloud by day, and deeply blue by night, studded all over with twinkling stars; the mellowed whiteness of a moon soaring high through an azure canopy, flooding meadow and forest with her silvery beams, or lighting up the breeze-rippled surface of the sea in long flickering lanes, like fairy paths leading to dreamland; a distant mountain rearing its huge form higher and higher from out the softened shades of night and anxious to catch the first glimpse of returning day; a health-laden breeze from the sea meeting a warmer one from the land and mingling its purity and strength with the odor of flowers from lawn, meadow, and forest; the waves at their feet murmuring the mysterious soul-language of eternity, and blending with the equally plaintive rustling of leaves overhead; who that has once seen, felt, and enjoyed all this will not yearn for it again?

Here, too, come students of nature to investigate her vigorous northern life—her handiwork in sea and air, lake and river, mountain and valley. The botanist finds a rich, interesting field, for in addition to the varied flora of forest, plain, and shore, he can fairly revel at ebb tide in a comparatively unexplored world of sea-ferns and Algæ. Bay and river, too, teem with fish, from the lordly salmon to the quaint, delicate sea-needle; and molluscan life in myriad forms inhabits the sea-bottom, or in death yields to the waves palaces of pearl to be strewn on the sand beaches—a gift of beauty from the lovely unseen.

It is with the bird life, however, that I and the readers of 'The Auk' are most concerned. Over this region an immense bird-wave rolls twice every year; now harbingers of sweet songs, rippling waters, and flowery banks; then forerunners of winter's icy reign. The varied character of surface makes it a favorite resting ground and breeding place of very many species. On all sides are extensive forests of evergreens; while sloping hills, clad with deciduous trees, marsh and upland, swamp and meadow, mud flats and sandy shore, resound with the rustling of wings, shrill piping notes, or sweet warbling songs.

During the migration the broad, shallow lagoons of the Miramichi Bay, protected from the disturbing winds and waves o

the ocean by long winding sand bars, or 'beaches,' swarm with Geese, Brant, Ducks, Cormorants, Gulls, Terns, etc., converting this locality into the finest shooting ground to be found anywhere on the Atlantic coast of America, where hundreds of sporting gentlemen resort every year. Moreover, an additional charm attaches to it as an observing station because of its proximity to the Baie des Chaleurs, the generally accepted northern *coast* limit of the Canadian Fauna, and many interesting problems in ornithology, respecting the range of several species, may be worked out in this section.

Having premised so much, I will now proceed to deal with the subject of this sketch.

About the 10th of January, 1884, some farmers in the neighborhood of Nequac, an Acadian village on the northern shore of Miramichi Bay, observed what they took to be a stray Turkey, feeding almost daily around their houses and farmyards. Thinking it belonged to some villager, they did not molest it. It was remarked, however, that the bird did not roost at night about the outbuildings; it generally disappeared at sunset, no one knew whither; but early next morning it would be found industriously turning over refuse and manure, apparently as tame and confiding as an ordinary domestic fowl. It would permit a person to approach within six or eight feet before seeming to notice his presence; then it would flutter to the nearest post, returning to the ground almost immediately. Its decided preference for garbage became at length the subject of discussion in the neighborhood, and several, among whom was Mr. Ruben Vienneau, began to grow skeptical about the stranger's genus. It was pointed out, however, that the Turkey had a well known weakness for flesh food, and was not particularly exact, sometimes, about the quality either; but Mr. Vienneau, having witnessed some of the stranger's wondrous gastronomic feats in swallowing wholesale large quantities of disgusting offal, refused to be converted from the apparent error of his ways. He continued to watch its movements and habits with more suspicious eyes. The hooked beak, long middle toe, and absence of the noisy 'gobble' were all noted and discussed, and finally the bird began to lose caste. Many plans were taken to effect its capture, but in vain. 'Childlike and bland' when feeding, even stupidly indifferent sometimes, it seemed capable, however, of exercising a surprising

amount of caution ; and no efforts or devices of its enemies could induce it to enter trap, cage, or barn. A crisis at length arrived. A sheep had died a few days before, and on January 29, Mr. Vienneau descried the 'Turkey' on the carcass, feeding on the entrails. This was the last straw that broke the back of his tottering faith. "C'est l'oiseau du diable," exclaimed the excited Frenchman, as he seized a gun and shot the impostor dead.

Through the timely thoughtfulness of Mr. Anthony Adams, merchant of Nequac, the bird was sent to John Nevins, Esq., police magistrate of the town. Justice Nevins takes a lively interest in ornithology, and has one of the finest private collections in New Brunswick. It proved to be a veritable Turkey Buzzard (*Cathartes aura*), and Mr. Vienneau's "l'oiseau du diable" now occupies a prominent place in that gentleman's cabinet.

Towards the middle of last September, I was astonished at learning that another Turkey Buzzard had been captured by Mr. David Savoy, of Black Brook, one of the numerous lumber-milling villages on the estuary of the Miramichi, and about twenty miles in a direct line from Nequac. The bird was, when I saw it, on exhibition in Chatham, a small town, situated about half-way between Newcastle and Black Brook. Mr. Savoy described the manner of its capture ; how he had hung up a salmon net to dry, and the bird had in some way become entangled in it. It was very wild he said, when first taken, but in three weeks a great change had come over it ; for when I saw the bird, it was feeding in a yard with ordinary poultry, which took no more notice of its presence than they did of one of themselves. I noticed, too, that the sight of one eye had been destroyed, and the ball was withered and sunken.

Its domestication seemed largely due to food alone ; for, as observed above, the creature was wild when first captured, but upon being fed grew remarkably docile, and made no further attempt to escape. When describing its manner of eating, especially the first meal, Mr. Savoy ruefully shook his head. That was enough. If the creature had to be fed on meat, it must be got rid of ; as long as he kept it, he had a veritable white elephant on his hands. One day he observed it greedily devouring some unsavory garbage. He was horrified, but smiled as a thought of relief came to him ; the butcher's slaughter-house was at hand, and immediately Buzzard stock took a boom. Even after stuff-

ing itself with offal, it would feed indiscriminately on the grain, potatoes, etc., cast to the barn-yard fowls, seemingly never satisfied.

I saw it also by night, perched a few feet above a stable floor; and in the presence of a lamp it acted very much like an ordinary fowl, except that it manifested a desire to hide its head from the glare of the light. During the whole period of its captivity, extending over three weeks, the bird made, it would seem, no attempt to fly; and this fact, added to its apparent stupidity, inclined me to believe that it had received some injury. I purchased it from the owner, who killed and sent it to me. Upon skinning the specimen, I discovered the cause of the blindness, for a small shot, probably a No. 6, was found imbedded under the edge of the iris of the withered ball. The pellet was encysted, and very much oxydized, showing it had been lodged there some time. Moreover, two similar pellets were detected, one under the skin on the left side, the other on the arm of the left wing; while the arm of the right wing had lately been pierced by a large shot, ploughing the muscle open and passing through the fleshy part of the shoulder, forming an ugly wound. The surrounding parts were very much discolored and inflamed. Such an injury must certainly have destroyed the bird's power of flight, and accounts, to a certain extent, for its apparently rapid domestication, and the aversion it showed to flying, but does not bear out the alleged manner in which it was captured.

This poor creature had evidently had a rough experience. Its was the checkered career of a tramp Ishmaelite, with every man's gun against it; and we cannot help regretting that its flight to these boreal regions to escape its southern tormentors, resulted so fatally to itself.

I am also informed by a gentleman who saw the bird after it was killed, that a Turkey Buzzard was shot five years ago in the vicinity of Kingston, Kent Co., about forty miles southeast of this town, and near the seashore.

The only other records known to me of their occurrence in northern localities, along the Atlantic sea-board are those of two taken in Massachusetts in 1863, and one reported from St. Stephen by Mr. Boardman, date not given. Nequac and Black Brook are, however, two hundred miles north of St. Stephen, and the difference in average summer temperature is even greater than would

be inferred from the difference of latitude; for the latter place is within the influence of the warm Bay of Fundy waters, whereas the former are upon a coast washed by colder Arctic currents. Why this species should be found here more frequently than to the south of us is an interesting problem for ornithologists. I cannot suggest an explanation. The common food supply seems neither more inviting nor abundant. Our coasts, it is true, abound more in fish, and maritime garbage would likely be more plentiful, but I am not sure that these birds show any marked predilection for this kind of diet.

On the fifth of last April, I was walking on the railroad track, in the vicinity of the town, shortly before sunset, when I came across three birds which were entire strangers to me. They were feeding at the time on the side of an embankment that, owing to its southern aspect, was already bare of snow; and as they flitted to the ground and returned to the telegraph wires, their blue backs and wings flashed brilliantly in the rays of the setting sun, causing me to think at first of the Jay; but no, these pretty strangers were but half his size. Fearing to approach too closely, lest they might take flight, I attempted to observe them for some time at a distance; but not having my field-glass, it was very unsatisfactory, besides curiosity kept urging me nearer and nearer. Presently, and to my great relief, it dawned on my mind they were paying very little, if any, attention to me, being wholly intent on foraging; and thus I was enabled to approach within a few yards, whence I made out more clearly the color of the plumage. Judge of my feelings of astonishment and incredulity, when their general characteristics suggested *Sialia sialis*—the Eastern Blue Bird, which I had merely read of, but had never seen. Impossible! Up in this cold dreary north on the fifth of April, with the whole country, field and forest, covered with a mantle of snow three feet thick! Surely I must be snow or color blind! Look again. Observe their rapid, but graceful descent, the accuracy with which they drop on their prey, and their almost immediate return. How quietly and still they sit on their perch, until some moving object attracts their attention; how familiar and confiding: they do not seem to notice my presence at all. If they are apprehensive of danger, and move off a little, the distrust is concealed under the appearance of business, seemingly making a longer flight to

pounce upon some insect. O yes, there can be no mistake about the birds' identity, those bright blue backs, wings, and tails, the reddish-brown breasts, the quiet demeanor, the feeding habits, all belong to but one, the Blue Bird; but will not the identification be discredited by professional ornithologists, since it was the work of an amateur? As far as I knew the species had never been reported farther north than the vicinity of St. John, and but rarely from there: Newcastle, however, was 150 miles from St. John, and almost directly north. These seemed to me strong reasons for taking one, but alas; I had no gun.

By this time the sun had set. The air began to grow chilly; my interesting companions ceased feeding, and commenced chirping to one another, as if discussing, what next? Presently a decision was reached; for the three rose on the wing, and were soon lost in the gathering shades of the dark pine forest.

The gray dawn of the morrow found me, gun in hand, hastening over the strong crust field, across which even a Goliath could have strode in safety. Everywhere silence reigned, disturbed only by the hard snow crunching under my feet, and echoing from the nearest pine clad hills.

The dark green of the woods had, during night, given place to a silvery covering of frost which transformed the whole forest into a mass resembling a great white cloud, thrown against the horizon of a blue sky. From the early chimney tops, columns of pale smoke were rising into the still morning air, so tall and graceful and white as to seem like delicate marble pillars supporting the arched dome overhead. But that which claimed most of my attention, and filled me with alternate hope and fear, was, shall I see again my feathered visitors of the evening before? When I reached their feeding ground nothing was to be seen. I waited long and anxiously. Presently the sun rose large and red, and shook his brilliant rays in profusion over the snowy landscape. Soon the whole forest was aglow, flashing and sparkling as if set with a million gems, but, like some fond dream or hope of the young heart, it soon vanished, leaving nothing except the dull reality. In a few minutes the hardy Crossbills ventured forth from their night retreat, and with sharpened appetites, began breakfasting on the cones, whispering to one another all the time. A Pine Grosbeak and Purple Finch, a solitary

Robin, and an occasional Jay added in turn their voices to wake up the slumbers of bird life.

That blue flash! What is it? Yes, there are the three pretty objects of my curiosity, perched on the telegraph wires where I last saw them, as quiet and easy of manner, as confiding and thoughtless of danger, and even more beautiful than on the evening before. I had killed hundreds of birds in my life: I had never felt such an absorbing interest in one before; yet on no occasion did I ever raise my gun with so much reluctance to take a life. And when at length I held in my hand a beautiful lifeless form, heard its two little friends, companions of its long journey and dreary nights, whispering to one another, methought, in mournful tones; when I saw them rise in the air, uttering a loud shrill note that sounded in my guilty ears like the curse of betrayed innocence, and fly away never to be seen by me again, my heart grew heavy, and I almost cursed that professional incredulity which drives an amateur into acts of needless cruelty. And even now as I raise my eyes from the paper, and look upon the graceful form, perched on a tiny stand, ornamented more than usual as if to make some restitution for the destruction of its life, the motionless presence recalls the events of that sunny April morning, and stirs anew the feeling of regret and pain.

THE PRESENT CONDITION OF SOME OF THE BIRD ROOKERIES OF THE GULF COAST OF FLORIDA.

BY W. E. D. SCOTT.

Second Paper.

SATURDAY, May 8. We were up and away early. Sailed out of the Nyakka River and along the northwest shores of Charlotte Harbor as far as Cape Haze; saw very few birds, and those only the commoner species.

From Cape Haze we crossed the harbor to the mouth of Matlacha Pass, the wind blowing almost a gale from the west.

This pass is between the mainland and Pine Island, the largest of the islands in Charlotte Harbor. On the way over my attention was attracted by large flocks of Man-o'-war Birds, which, with an ease and grace that surprised me, were fishing in the rough water during a very strong wind. There were hundreds of them in all phases of plumage.

We reached our destination—the island which Mr. Wilkerson had told me was the breeding place of Reddish Egrets—at about four o'clock, and at once came to anchor. A few Herons were to be seen from time to time flying to the island, and presently I took the small boat and went ashore to reconnoitre. This had evidently been only a short time before a large rookery. The trees were full of nests, some of which still contained eggs, and hundreds of broken eggs strewed the ground everywhere. Fish Crows and both kinds of Buzzards were present in great numbers and were rapidly destroying the remaining eggs. I found a huge pile of dead, half decayed birds, lying on the ground which had apparently been killed for a day or two. All of them had the 'plumes' taken with a patch of the skin from the back, and some had the wings cut off; otherwise they were uninjured. I counted over two hundred birds treated in this way. The most common species was the Reddish Egret, though there were about as many Louisiana Herons; the other species were the Snowy Heron, Great White Egret, and the Little Blue Heron in both phases of plumage. There were also a few Pelicans, White Ibises, and one or two Great Blue Herons. I remained there till almost dark, but did not fire at any of the few frightened Herons (about fifty in all), which came to roost on the island. Among these I noticed a few Reddish Egrets and two of the so-called Peale's Egrets, but most of the birds were the commoner species of Heron. This was the rookery that Mr. Wilkerson had spoken of; within the last few days it had been almost destroyed, hundreds of old birds having been killed and thousands of eggs broken. I do not know of a more horrible and brutal exhibition of wanton destruction than that which I witnessed here. I shall have to refer to this point later, as I visited it again in about a week, and there learned from a man I met further details of the slaughter, the results of which I had witnessed.

Sunday, May 9. This morning Capt. Baker went with me in the small boat to explore in detail the neighboring islands. We

found a lamentable scarcity of birds, and the Captain assured me that ten years before, when on fishing trips in these same waters, and at about the same time of year, the whole region fairly teemed with bird life of all kinds.

About 12 o'clock we returned to the sloop and got under way, going through the pass in the direction of Punta Rossa. After sailing along for some six or seven miles we came in sight of a small island where many Brown Pelicans were breeding or about to breed. We anchored and went to the island in question to have a closer look at the inhabitants. The Pelicans, of which there were some forty or fifty pairs, were just beginning to build. There were also some Reddish Egrets, a few of which were in the white phase of plumage. Beside these were many *Ardea ruficollis tricolor*, some *Ardea candidissima*, and a few *Ardea egretta*. None of the Herons, save a pair of *Ardea virescens*, had begun to build; the others were only looking the ground over. I fancied that some of them had been driven to this point from the large rookery found deserted the evening before. I watched the rookery till dark, not firing at anything; a great many Herons of all the kinds above enumerated, as well as one pair of *A. herodias*, many Florida Cormorants, White Ibises, and additional pairs of Pelicans came to roost at the island. All of them were very shy and suspicious, being startled by the slightest noise or movement, and none of the birds would come near the island until the small boat had returned to the sloop. Just at dusk six of the so-called Peale's Egrets came in and alighted on the mangroves close by me. I learned later that the birds on this island had been much persecuted by gunners, and that thousands of all the species seen here had formerly bred and roosted at this point. Also that at one time many Roseate Spoonbills (*Ajaja ajaja*) had made this a roosting place.

Monday, May 10. In the morning we camped on the island, about half a mile away from the rookery, and during the day I added to my collection seven Reddish Egrets, one Peale's Egret, and four other Herons, including a fine *A. herodias*. Among the Reddish Egrets taken were three specimens which showed a very considerable admixture of *white* feathers on the head, throat, and breast, thus approaching the Peale's Egret type; and there is no question in my mind but that the two phases are forms of the same species. For further remarks on this matter

I refer to certain notes made by Mr. James Henry Devereux in Tampa Bay and published by me in the 'Bulletin of the Nuttall Ornithological Club,' Vol. VII, 1881, p. 20.

While hunting to-day I heard repeatedly the song of a Vireo that was new to me, but as the birds were shy and kept in the densest mangrove swamps, I was unable to procure one. Thanks, however, to Mr. Atkins, then at Punta Rossa, but now of Key West, I later identified the species as the Black-whiskered Vireo (*Vireo altiloquus barbatulus*), as I have already recorded (Auk, Vol. IV, April, 1887, pp. 133-134).

During the afternoon there were countless Man-o'-war Birds flying over in enormous flocks, and at great height.

Tuesday, May 11. The Captain and Mr. Dickinson went to Punta Rossa for water and letters, and I spent the day making into skins the birds killed late yesterday. About 5.30 in the evening I went to the rookery, but though I sent the boat back to our camp, and though not a gun had been fired in the heronry during the day, the birds were so alarmed by the little shooting I had done the day before, that but very few birds save Brown Pelicans came to roost at the rookery. I mention this to show how very wary the birds had become, and how well they knew the meaning of the report of a gun. I took only seven birds during the time between half past five and dark.

Wednesday, May 12. Wishing to visit again the rookery before mentioned, the Captain and myself started in the small boat early this morning, leaving Mr. Dickinson in charge of the sloop and camp. We had only some seven miles to go, and reached our destination about noon. On the way through the islands there were many Reddish Egrets and other small Herons, but all were very shy and had evidently been much hunted. After getting some dinner and making a sort of camping place for the night on one of the islands, we went, about the middle of the afternoon, to the rookery.

The condition of affairs here was much the same as I have already described, except that not having been disturbed for a few days, the birds were beginning to come back to the ground in considerable numbers, and many Louisiana Herons were building, and some had nests with one or two eggs.

We found, in camp at the rookery, Mr. Frank Johnson, of Mound Key, whose postoffice address is Punta Rossa, Florida,

and who is a professional 'bird-plumer.' He had returned to this point this afternoon, having been here a few weeks earlier, when he had found the birds very numerous. He was hunting plumes, particularly of the Snowy Heron, American Egret, and Reddish Egret, as they brought the highest prices, but he killed to sell to the 'taxidermists,' as he called them, "almost anything that wore feathers." He said he wished there was some law to protect the birds, at least during the breeding time, which would not be violated. He added, however, that as everybody else was 'pluming', he had made up his mind that he might as well have his share.

He was killing birds and taking plumes now for Mr. J. H. Batty, of New York City, who employed many men along the entire Gulf Coast from Cedar Keys to Key West. When asked what Mr. Batty purchased, it was again "almost anything that wore feathers, but more particularly the Herons, Spoon-bills, and showy birds."

Mr. Batty was, he told me, well known all along the Gulf Coast, and had made regular trips to this region for the past three winters or more. He was the gentleman I heard of at Hickory Bluff, who bought birds, travelling about the coast in a small schooner and supplying the native gunners with breech-loading shot guns and ammunition. Mr. Johnson had bought a gun of Mr. Batty and was using it when I met him. One barrel of this gun was for shot, 12-guage, and the other was a small bore rifled. This last, Johnson explained to me, he used for Pelicans and other wild birds, and as it made so little noise, was serviceable in getting the smaller Herons at close range in the rookeries.

I shall give later more details of Mr. Batty and his method of working, as I met him and stayed about for some five or six days where he was killing birds. To go on with Mr. Johnson. He had lived about here for many years, and told me of the enormous rookeries and breeding places that had formerly been the homes of the birds of this region. Now most of them were entirely deserted, and the number of those still resorted to by an ever decreasing population were yearly becoming smaller; that it was easy to find thousands of birds, five or six years back, where absolutely none existed now. My own observation leads me to agree with this statement, but, in fact, the destruction must have been greater than can be realized.

Mr. Johnson told me of the extermination of a Brown Pelican Rookery, near where he lived, which is a very fair example of the atrocities that have been and are still being committed to obtain 'bird plumes.'

It seems that the year before the Brown Pelicans selected a small mangrove island near to that on which Mr. Johnson lived, and about eighty or a hundred pairs made nests, laid eggs, and hatched out their young. Johnson had not touched the birds or disturbed them, as he proposed to let them rear their young. But one afternoon when Johnson was absent from home hunting, the old Frenchman before referred to, A. Lechevallier, came in with a boat, and deliberately killed off the old birds as they were feeding the young, obtaining about one hundred and eighty of them. The young, about three weeks old, to the number of several hundred at least, and utterly unable to care for themselves in any way, were simply left to starve to death in their nests, or to be eaten by raccoons and Buzzards. It is needless to say that the birds never came back to that rookery.

There were very few birds that came in to roost at the rookery where we were, and I killed only one Reddish Egret. I paid Johnson two dollars not to shoot, so that I might get a good idea of the birds, both as to kind and number that roosted there. Johnson went with us back to the camp, and it was during the evening that he gave the information transcribed above.

Thursday, May 13. Going back to the sloop this morning I saw very few birds; in the afternoon I went out to the roosting place and killed two Reddish Egrets; one of them had large patches of white feathers on the throat, neck, breast, and back. A flock of them in the pure white phase (*A. pealei*) flew by me, just out of gun shot, during the afternoon. These birds are not at all uncommon at this locality, but are not so numerous as at points further south. They are well known by the 'plume hunters' as 'muffled-jawed Egrets', and sound and flat skins of them command good prices. I saw, in a rookery at the north entrance to Matlacha Pass, among a great pile of other birds that had been recently killed and their plumes removed, twelve of this phase that were easily recognizable, having had only the skin of part of the back, neck, and head taken off.

For the last few days I have noted Black-bellied Plover in full plumage, going north in considerable flocks. These were,

I think, undoubtedly *Charadrius squatarola*, although no specimens were obtained. I am much impressed with the great numbers of the far northward breeding birds which are present still in large numbers at points about here. At any of the passes or outside beaches I see daily and in large flocks such birds as *Charadrius squatarola*, *Ægialitis semipalmata*, *Arenaria interpres*, *Macroramphus griseus*, *Tringa canutus*, *T. minutilla*, *T. alpina*, *Calidris arenaria*, etc. These I carefully identified and made almost daily notes of their occurrence until the 25th of May. After that observations were made of *Macroramphus griseus* in large flocks as late as June 10.

Friday, May 14. Spent the day in waiting for some of the larger birds to dry—so as to pack them—and in hunting for the Black-whiskered Vireos, which appear to be common but particularly wary and difficult to see in the thick mangrove.

Saturday, May 15. Packed up everything in readiness to continue course to-morrow, leaving birds to dry until the last moment.

Sunday, May 16. Left early this morning, and going south about four miles, anchored again off two large mangrove islands just inside of the south end of Pine Island. Here were more birds breeding than at any point where we had thus far cruised. These were principally Brown Pelicans, and there must have been at least two hundred pairs or more. The nests were in most cases finished, and many of them contained eggs.

The Florida Cormorants also had nests in considerable numbers, and beside these a few pairs of Great Blue Herons were breeding on the island. No other birds were breeding here.

There were many thousands of Man-o'-war Birds that made this a roosting or resting place, and many of them were here more or less through the day, their numbers being greatly augmented every night. They were in all phases of plumage and generally moulting.

The birds are said not to breed anywhere on the Gulf Coast, except at two points near Key West, and the breeding season, judging from the examples of the birds obtained, was past by two or three months. These birds haunt the Pelican and Heron rookeries, preying on the fish brought to the young birds, and are as truly parasitic as the Jaegers. Often, too, I have seen

them chasing the small Gulls, obliging them to give up fish just caught. Again they are to be seen in the wake of a school of porpoises, taking whatever comes in their way, such as mutilated fish and the like.

In the nests of the Great Blue Herons in the rookery, four nests in all, I was surprised to find young birds. In most cases they were nearly ready to fly, but one nest contained chicks not more than two weeks old. This, taken in connection with the fact of their having half grown young as early as February 7, at Tarpon Springs—a point more than a hundred miles north—is indicative of a long breeding season—at least five or six months—and the probability that two broods are hatched. However, this late breeding may not be normal, for the birds are all so harassed and driven about by plume hunters, that their plans for breeding are evidently greatly disarranged.

Perhaps the following facts will make this more apparent to the reader and corroborate the above statement.

I have several times taken the different species of Herons and Egrets at *roosting rookeries* where there was not a single nest, and far away from any known breeding ground, which had in their ovaries fully developed eggs with shells on. Some of them had evidently laid one or more eggs and, being severely frightened by hunters, had deserted their breeding grounds. At such rookeries I have frequently found broken eggs lying on the ground, though there would be no nests on the island and the birds would only come to roost late in the afternoon and leave very early in the morning.

Again during the late summer and early-fall months of the present year I have twice found inland rookeries where the nests still contained some eggs and where there were young birds of all ages. One such case was near Tarpon Springs where several hundred birds were breeding, August 26, 1886. At this date there were unhatched eggs in the nests, besides young in all stages, from those just hatched to those ready to fly. The birds were mainly *Ardea cærulea*, though there were a few *A. ruficollis tricolor*, and *A. candidissima*.

At the rookery last mentioned before this digression, I spent the day after eleven o'clock, and as I did not fire a gun during the time there was ample opportunity to examine the various species that were breeding, and those that came to roost there at

night. Among the latter were many Reddish Egrets, a few of which were in the white phase, and all of the common Herons and Egrets in small numbers.

Monday, May 17. Obtained a number of Man-'o-war Birds as they flew by our anchorage, the weather being stormy. The day was about consumed in making them into skins. All of these birds were moulting and some of them I took to be young of that year.

Tuesday, May 18. Spent about as yesterday, save that I was all the afternoon at the rookery, where the birds seem to have increased in numbers, especially at roosting times, and I think that some other breeding place, not very remote, having been attacked by the plume hunters, numbers of the birds have been driven off and have escaped to this point.

Wednesday, May 19. Packed up all the birds collected at this and other points, all having been unpacked to dry, and started in in the afternoon for Punta Rossa, some six miles distant. I have omitted to state that our camp for the past few days had been on the north point at the mouth of the Caloosahatchie River and at least a mile away from the rookery. Arriving at Punta Rossa at about four o'clock, I soon made the acquaintance of Mr. J. W. Atkins, the assistant telegraph operator at this point, the cable for Key West and Cuba having its starting point at Punta Rossa. Mr. Atkins is much interested in birds, and has a good collection of skins made in the main just about Punta Rossa.

His collection embraces most of the commoner species of small birds that occur in the vicinity, and I noticed such rare birds as Cape May Warblers, and a single Mangrove Cuckoo, taken at Punta Rossa. Here we obtained the *Dendroica discolor* described at length in 'The Auk' for April, 1887 (p. 134).

Thursday, May 20. We waited for the mail to arrive and about 10 A. M. started again on our cruise, this time going to the east of Pine Island, and kept a northerly course; for, wishing to look over some of the ground in more detail on the way back, I had determined to go no further south. At Punta Rossa to-day I again met Mr. Abe Wilkerson, who had just returned from his trip to the Myakka Lakes, where he did not meet with much success, for though he found large rookeries, the birds had been so persistently hunted they had become very wild. He had about seventy-five 'plumes,' I believe, as the result of the trip,

mostly of the Snowy Heron. He told me that the Mexican Buzzard, as he called it, was common in the region where he had been and showed me a skin of one that he had killed. The bird was *Polyborus cheriway*, and it breeds in this area, at least such is my conjecture from birds of the year that have been sent to me from the vicinity of the headwaters of the Myakka River.

Wanting a good pilot and a man conversant with the country I hired Mr. Wilkerson to make the trip with me back to Tarpon Springs, and besides the work he did I gained much valuable information concerning the condition of the breeding grounds further south, and the decrease in birds during the past few years. Without going into too great details, it was substantially the same as the facts gathered from Frank Johnson, Mr. Atkins, and others, and is a story of almost a war of extermination.

To-day we passed a large rookery known as the Boca Grande Rookery, and here I saw a few 'Pink Curlews,' as the 'plumers' call *Ajaja ajaja*, but as there was a constant discharge of guns, and as the war seemed to be going on without any appearance of ceasing, we passed on without stopping. The principal birds seemed to be Man-o'-war Birds and Brown Pelicans, and though there were large numbers of each, Captain Baker said that when he was fishing for a season at this point a few years before, there were hundreds of birds of all kinds at this rookery where there was one now.

We kept on our course north and, sailing up along the east coast of Pine Island, crossed over the mouth of Charlotte Harbor and anchored for the night at a deserted fishing station just south of Big Gasparilla Pass. It was quite dark when we anchored here, so I saw no birds. But during the afternoon and until dark large flocks—hundreds—of Gulls, which I thought were mostly *Larus atricilla*, passed close to the water, not fishing but evidently migrating northward. Many of these birds were in immature plumage, and I shall have occasion to refer to them again later in connection with other species observed.

(To be continued.)

THE BIRDS OF THE WEST INDIES, INCLUDING
THE BAHAMA ISLANDS, THE GREATER AND
THE LESSER ANTILLES, EXCEPTING
THE ISLANDS OF TOBAGO
AND TRINIDAD.

BY CHARLES B. CORY.

[Continued from p. 120.]

FAMILY PHASIANIDÆ.

GENUS *Numida* LINN.

Numida LINNÆUS, Syst. Nat. I. 1766.

✓ *Numida meleagris* LINN.

Numida meleagris LINN. Syst. Nat. I. p. 273 (1766).—GOSSE, Bds. Jam. p. 325 (1847).—DENNY, P. Z. S. 1847, p. 39 (Jamaica).—SALLÉ, P. Z. S. 1857, p. 236 (San Domingo).—SCL. P. Z. S. 1861, p. 80 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 204 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 303 (Jamaica).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 97 (1866) (San Domingo).—GUNDEL, Repert. Físico-Nat. Cuba, I, p. 397 (1866).—SUNDEV, Oefv. K. Vet. Akad. For. 1869, p. 601 (Porto Rico).—LAWR. Pr. U. S. Nat. Mus. I. p. 487 (1878) (Barbuda).—A. & E. NEWTON, Handb. Jamaica, p. 117 (1881).—CORY, Bds. Haiti & San Domingo, p. 16 (1885); *ib.* List Bds. W. I. p. 24 (1885).

Common in Cuba, San Domingo, Jamaica, Porto Rico, and Barbuda.

Ortalia ruficauda is mentioned as occurring in the Grenadines, and is supposed to have been introduced (Lawr. Pr. U. S. Nat. Mus. I, p. 278 (1878)).

FAMILY TETRAONIDÆ.

GENUS *Colinus* LESS.

Colinus LESSON, Man. d'Orn. II, p. 190, 1828.

✓ *Colinus cubanensis* (GOULD).

Ortyx virginianus D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 182 (1840).—SUNDEV, Oefv. K. Vet. Akad. For. 1869, p. 601.

Ortyx cubanensis GOULD, Mon. Odont. (1850).—CAB. J. f. O. 1856, p. 337.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—ALBRECHT, J. f. O. 1861, p. 213.—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 303 (1866).—GRAY, Handl. Bds. II, p. 273 (1870).—GUNDL. J. f. O. 1874, p. 300; *ib.* 1875, p. 293; *ib.* 1878, p. 161; *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 350 (1878).

Ortyx cubensis SCL. & SALV. Nom. Avium Neotr. p. 137 (1873).

Ortyx virginianus var. *cubanensis* BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 468 (1874).

Colinus cubanensis CORY, List Bds. W. I. p. 24 (1885).

SP. CHAR.—Upper portions of throat and superciliary stripe white; band of neck passing from the mandible, under the eye, down the sides of the neck; breast and lower portion of throat black; back chestnut, variegated with dull brown; the feathers on the nape heavily spotted with white; under parts variegated, dull brown, rufous, white, and dark brown; sides of the body dull rufous, heavily spotted with white and black; primaries dull brown.

The female differs from the male in having the white stripe and throat tawny buff, and in lacking the chestnut on the breast to a great extent.

Length, 8; wing, 4; tail, 2.50; tarsus, 1; bill, .45.

HABITAT. Cuba and Porto Rico.

Colinus virginianus (LINN.).

Tetrao virginianus LINN. Syst. Nat. I, p. 277 (1766).

Ortyx virginiana GOSSE, Bds. Jam. p. 328 (1847).—CORY, Bull. Nutt. Orn. Club. VI, p. 154 (1881) (Haiti).

Ortyx virginianus A. & E. NEWTON, Ibis, 1859, p. 254 (St. Croix).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 120 (1859) (Bahamas).—SCL. P. Z. S. 1861, p. 80 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 303 (Jamaica).—LAWR. Pr. U. S. Nat. Mus. I, pp. 237, 487 (1878) (Antigua).—CORY, Bds. Bahama I. p. 142 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 117 (1881).—CORY, Bds. Haiti & San Domingo, p. 138 (1885).

Colinus virginianus CORY, List Bds. W. I. p. 24 (1885).

SP. CHAR. *Male*:—Above rich brownish red, mottled with black; crown black, shading into brown at the base of the skull, and mottled with black and white on the nape; a white superciliary line passing from nostril to nape; throat white, bordered broadly with black; upper breast and sides reddish brown, shading into white on the belly, the feathers thickly banded with black; crissum reddish brown; tertials and some of the wing-coverts edged with yellowish white; bill entirely black.

Female.—Resembles the male; the white of the head and throat replaced by tawny, without black edging.

Length, 8.50; wing, 4.50; tail, 2.50; tarsus, 1; bill, .52.

HABITAT. Bahamas, Haiti, San Domingo, Jamaica, St. Croix, and Antigua.

The forms represented in the different islands vary considerably, and it is possible that they represent good geographical races. The Bahama bird differs from that found in Florida in having heavy chestnut stripings on the side much broader than in the Florida birds. The black on the throat is more restricted; the lower throat showing considerable chestnut, separating the black from the upper breast; the red on the back is paler. The feathers on the underparts are very heavily banded with black, about equalling some specimens of *floridanus* in this respect, but the underparts are never mottled gray as in some specimens of *cubanensis*. The Bahama bird differs even more from that found in San Domingo, which has the underparts covered with narrow black arrow-shaped markings, somewhat obsolete in the female; the male having a patch of black on the throat succeeded by pale chestnut; the general chestnut coloring is paler than in the Bahama bird.

GENUS *Eupsychortyx* GOULD.

Eupsychortyx GOULD, Mon. Odontophorinæ, p. 15-16, 1850. Type, *Tetrao cristatus* LINN.

Eupsychortyx sonninii (TEMME).

Perdix sonninii TEMME, Fig. et Gall. III, p. 451 (1815); *ib.* Pl. Col. 75 (1820-29).

Eupsychortyx sonnini NEWTON, Ibis, 1860, p. 308 (St. Thomas).—CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 378 (St. Thomas).—CORY, Revised List Bds. W. I. p. 24 (1885).

Ortyx sonninii NEWTON (REINHARDT), Ibis, 1861, p. 114 (St. Thomas).

SP. CHAR. Male.—Face dull white; head crested; feathers of the crest dull buff brown; throat and superciliary stripe passing down the sides of the neck dull brownish red; sides of the neck mottled with black and white; upper back mottled with reddish brown, buff, and black; rest of upper surface marked with chestnut, black, and gray, margined with buff; tail slaty dotted and marked with buff and dark brown; primaries brown; chest grayish, mottled with brown; rest

of under surface, sides, and under tail-coverts chestnut brown, the feathers dotted with white; bill black.

Female.—Top of the head and crest brown; throat and superciliary stripe dark gray, tinged with pale brown; flank marking paler than in the male; general plumage somewhat paler than in the male, and the black patches somewhat heavier.

Length, 7.50; wing, 4.30; tail, 2.55; tarsus, 1.30; bill, .54.

HABITAT. St. Thomas.

In 1860 Professor Newton mentions this species as occurring in St. Thomas. The bird undoubtedly still exists in the Island of St. Thomas. I have lately seen a specimen in the collection of Mr. Geo. N. Lawrence, from that Island. It was probably introduced from South America.

Cassin writes (l.c.), "Mr. Swift has had the kindness to inform me that this species was introduced into the Island of St. Thomas some years since, from Venezuela, and that it has now become of frequent occurrence, quite naturalized, and rearing young freely throughout the Island. The present specimens are exactly the species figured by Mr. Gould under this name, and identical with specimens in Acad. Mus. labelled 'Venezuela' and 'Cumaná.'"

FAMILY ŒDICNEMIDÆ.

GENUS Œdicnemus TEMM.

Œdicnemus TEMMINCK, *Man. d'Orn.* 1815.

Œdicnemus dominicensis CORY.

Œdicnemus dominicensis CORY, *Journ. Bost. Zool. Soc.* II, p. 46 (1883); *ib.* *Auk*, I, p. 4 (1884); *ib.* *Bds. Haiti and San Domingo*, p. 140 (1885); *ib.* *List Bds. W. I.* p. 25 (1885).—THOMPSON, *Auk*, II, p. 110 (1885).

Sp. CHAR. *Male*.—Top of the head, back, wing-coverts, and tail brown; feathers with very pale edgings, giving a mottled appearance to the back; the tail-feathers showing a band of dull white, succeeded by a broad black tip; breast slaty becoming dull white on the throat; abdomen white tinged with very pale rufous; a line of black passing from the top of the eye, along the sides of the head to the neck; under surface of wings white, becoming dark brown at the tips; the shafts of the feathers on the breast and throat dark brown, form-

ing numerous hair-like lines on the surface of the plumage; legs and feet greenish yellow; upper mandible black; under mandible green at the base, shading into black at the tip.

The sexes appear to be similar.

Length, 14.50; wing, 8.50; tail, 3.75; tarsus, 3.75; bill, 1.50.

HABITAT. San Domingo.

FAMILY CHARADRIIDÆ.

GENUS *Charadrius* LINN.

Charadrius LINNÆUS, Syst. Nat. I, 10th ed. p. 150, 1758; *ib.* 12th ed. p. 253, 1766.

✓ *Charadrius dominicus* MÜLL.

Charadrius dominicus MÜLL. Syst. Nat. Suppl. p. 116 (1776).—CASSIN, Pr. Acad. Nat. Sci. Phila. 1864, p. 241 (Jamaica).—A. & E. NEWTON, Handb. Jamaica, p. 115 (1881).—CORY, List Bds. W. I. p. 25 (1885).—WELLS, List Bds. Grenada, p. 7 (1886).

Charadrius virginianus GOSSE, Bds. Jam. p. 333 (1817).—GUNDL. J. f. O. 1856, p. 423 (Cuba).—A. & E. NEWTON, Ibis. 1859, p. 255 (St. Croix).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 66 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 358 (1866).—LAWR. Ann. Lyc. N. Y. VIII, p. 98 (1867) (Sombbrero).—GUNDL. J. f. O. 1875, p. 332 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 67 (1878) (Dominica); *ib.* p. 197 (St. Vincent); *ib.* p. 238 (Antigua); *ib.* p. 241 (Barbuda); *ib.* p. 276 (Grenada); *ib.* p. 461 (Gaudeloupe).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 381 (1878) (Porto Rico).

Charadrius marmoratus LEMB. Aves Cuba, p. 105 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

Charadrius virginianus ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).

Charadrius pluvialis SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 588 (St. Bartholomew).

Charadrius pluvialis americanus SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 602 (Porto Rico).

Charadrius fulvus var. *virginianus* CORY, Bds. Bahama I. p. 145 (1886). Antilles in Winter.

✓ *Charadrius squatarola* (LINN.).

Tringa squatarola LINN. Syst. Nat. I, 10th ed. p. 149 (1758); *ib.* 12th ed. p. 252 (1766).

Tringa helvetica LINN. Syst. Nat. I. p. 250 (1766).

Vanellus squatarolus D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 242 (1840).

- Squatavola helvetica* GOSSE, Bds. Jam. p. 333 (1847).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—MARCHI, Pr. Acad. Nat. Sci. Phila. 1864, p. 66 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 358 (1866); *ib.* J. f. O. 1875, p. 232 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 197 (1878) (St. Vincent).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 380 (1878) (Porto Rico).—CORY, Bds. Bahamas I. p. 144 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 115 (1881).—CORY, List Bds. W. I. p. 25 (1885).—WELLS, List Bds. Grenada, p. 7 (1886).
- Charadrius helveticus* BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

Found in winter in the Bahamas, Cuba, Jamaica, Porto Rico, St. Vincent, and Grenada.

GENUS *Ægialitis* BOIE.

Ægialitis BOIE, Isis, 1822, p. 558.

Ægialitis vocifera (LINN.).

- Charadrius vociferus* LINN. Syst. Nat. I, 10th ed. p. 150 (1758).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 246 (1840).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 602 (Porto Rico).
- Ægialitis vociferus* GOSSE, Bds. Jam. p. 330 (1847).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—MARCHI, Pr. Acad. Nat. Sci. Phila. 1864, p. 66 (Jamaica).—CORY, Bds. Bahama I. p. 145 (1880); *ib.* Bds. Haiti & San Domingo, p. 141 (1885); *ib.* List Bds. W. I. p. 25 (1885).
- Oxyechus vociferus* GUNDL. J. f. O. 1856, p. 424 (Cuba); *ib.* Repert. Fisico-Nat. Cuba, I, p. 359 (1866); *ib.* J. f. O. 1875, p. 333 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 382 (1878) (Porto Rico).
- Ægialites vociferus* SALLÉ, P. Z. S. 1857, p. 236 (San Domingo).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas).—NEWTON, Ibis, 1860, p. 307 (St. Thomas).
- Charadrius* (*Ægialitis*) *vociferus* BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 97 (1867) (San Domingo).
- Ægialitis vocifera* A. & E. NEWTON, Handb. Jamaica, p. 115 (1881).
- Oxyechus vociferus* WELLS, List Bds. Grenada, p. 7 (1886).

Recorded from the Bahamas and Greater Antilles.

Ægialitis wilsonia (ORD).

- Charadrius wilsonius* ORD, ed. Wils. IX, p. 77 (1825).—LEMB. Aves Cuba, p. 106 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

- Ægialitis wilsonius* BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Cuba).
- Ægialitis wilsonius* CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 378 (St. Thomas).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 66 (Jamaica).—CORY, Bds. Bahama I. p. 147 (1880); *ib.* Bds. Haiti & San Domingo, p. 143 (1885); *ib.* List Bds. W. I. p. 25 (1885).
- Ochthodromus wilsonius* GUNDL. Repert. Fisico-Nat. Cuba, I, p. 359 (1866); *ib.* J. f. O. 1874, p. 313 (Porto Rico); *ib.* 1875, p. 333 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 381 (1878) (Porto Rico).
- Ægialitis wilsonia* A. & E. NEWTON, Handb. Jamaica, p. 115 (1881).

Common in the Bahamas and Greater Antilles.

✓ *Ægialitis semipalmata* (BONAP.).

- Charadrius semipalmatus* "Bp. Obs. Wils. No. 219 (1825)."—LEMB. Aves Cuba, p. 107 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 588 (St. Bartholomew); *ib.* p. 602 (Porto Rico).
- Ægialitis semipalmata* GOSSE, Bds. Jam. p. 333 (1847).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 66 (Jamaica).—SCL. P. Z. S. 1876, p. 14 (Santa Lucia).—LAWR. Pr. U. S. Nat. Mus. I, p. 197 (1878) (St. Vincent); *ib.* p. 241 (Barbuda); *ib.* p. 261 (Guadeloupe).—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia).—A. & E. NEWTON, Handb. Jamaica, p. 115 (1881).—CORY, Auk, III, p. 502 (1886) (Grand Cayman).
- Ægialitis semipalmatus* BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas).
- Ægialens semipalmatus* GUNDL. Repert. Fisico-Nat. Cuba, I, p. 359 (1866); *ib.* J. f. O. 1875, p. 335 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 384 (1878) (Porto Rico).
- Ægialitis semipalmatus* GUNDL. J. f. O. 1862, p. 88 (Cuba).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—LAWR. Ann. Lyc. N. Y. VIII, p. 100 (1867) (Sombbrero).—CORY, Bds. Bahama I. p. 148 (1880); *ib.* Bds. Haiti & San Domingo, p. 144 (1885); *ib.* List Bds. W. I. p. 25 (1885).—TRISTRAM, Ibis, 1884, p. 168 (San Domingo).
- Ægialites semipalmata* WELLS, List Bds. Grenada, p. 7 (1886).

Abundant in winter in many parts of the West Indies. Recorded from Bahamas, Cuba, Jamaica, Haiti, San Domingo, Porto Rico, Santa Lucia, St. Vincent, Barbuda, Gaudeloupe, St. Bartholomew, Sombbrero, Grenada, and Grand Cayman.

✓ *Ægialitis nivosa* CASS.

- Ægialitis nivosa* CASSIN, in Baird's Bds. N. Am. p. 696 (1858).
- Ægialitis tenuirostris* LAW. Ann. Lyc. N. Y. VII, p. 455 (1862) (Cuba).

- Ægialvus tenuirostris* GUNDL. Repert. Fisico-Nat. Cuba, I, p. 359 (1866);
ib. J. f. O. 1875, p. 336 (Cuba).
Ægialitis nivosus CORY, List Bds. W. I. p. 25 (1885).

Accidental in Cuba.

* *Ægialitis meloda* (ORD).

- Charadrius melodus* ORD, ed. Wils. VII, p. 71 (1824).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).
Ægialitis melodus GOSSE. Bds. Jam. p. 330 (1847).—SCL. P. Z. S. 1861, p. 80 (Jamaica).—GUNDL. J. f. O. 1862, p. 88 (Cuba).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—CORY, Bds. Bahama I. p. 148 (1880);
ib. List Bds. W. I. p. 25 (1885).
Ægialites melodus BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas).
Ægialvus melodus GUNDL. Repert. Fisico-Nat. Cuba, I, p. 359 (1866);
ib. J. f. O. 1875, p. 386 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 385 (1878) (Porto Rico).

Winter visitant to the Bahamas and Greater Antilles.

FAMILY HÆMATOPODIDÆ.

GENUS *Hæmatopus* LINN.

- Hæmatopus* LINNÆUS, Syst. Nat. I, 10th ed. p. 152, 1758; *ib.* 12th ed. p. 257. 1766.

✓ *Hæmatopus palliatus* TEMM.

- Hæmatopus palliatus* TEMM. Man. d'Orn. II, p. 532 (1820).—LEMB. AVES Cuba, p. 104 (1850).—GUNDL. J. f. O. 1856, p. 423 (Cuba).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas); *ib.* BREWER, p. 308 (1860) (Cuba).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 358 (1866).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 588 (St. Bartholomew).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 379 (1878) (Porto Rico).—CORY, Bds. Bahama I. p. 150 (1880); *ib.* Bds. Haiti & San Domingo, p. 145 (1885); *ib.* List Bds. W. I. p. 25 (1885).

Records of the occurrence of this species in the Bahamas, Cuba, Haiti, San Domingo, Porto Rico, and St. Bartholomew.

FAMILY APHRIZIDÆ.

GENUS *Arenaria* BRISS.

- Arenaria* BRISSON, Orn. V, p. 132, 1760.

✓ *Arenaria interpres* (LINN.).

Tringa interpres LINN. Syst. Nat. I. 10th ed. p. 148 (1758); *ib.* 12th ed. p. 248 (1766).

Streptopelia interpres GOSSE, Bds. Jam. p. 333 (1847).—LEMB. Aves Cuba. p. 100 (1850).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas); *ib.* BREWER, p. 308 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 66 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba I, p. 357 (1866).—LAWR. Ann. Lyc. N. Y. VIII, p. 100 (1867) (Sombrero).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 588 (St. Bartholomew); *ib.* p. 602 (Porto Rico).—LAWR. Pr. U. S. Nat. Mus. I, p. 67 (1878) (Dominica); *ib.* p. 197 (St. Vincent).—GUNDL. J. f. O. 1875, p. 331 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 379 (1878) (Porto Rico).—CORY, Bds. Bahama I. p. 151 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 115 (1881).—TRISTRAM, Ibis, 1884, p. 168 (San Domingo).—CORY, List Bds. W. I. p. 25 (1885).—WELLS, List Bds. Grenada, p. 7 (1886).

Arenaria interpres CORY, Auk, III, p. 502 (1886) (Grand Cayman).

Bahamas and Antilles in winter.

FAMILY RECURVIROSTRIDÆ.

GENUS *Himantopus* BRISS.

Himantopus BRISSON, Orn. V, p. 33, 1760.

✓ *Himantopus mexicanus* (MULL.).

Charadrius mexicanus MÜLL. Syst. Nat. Suppl. p. 117 (1776).

Himantopus nigricollis GOSSE, Bds. Jam. p. 386 (1847).—LEMB. Aves Cuba p. 102 (1850).—A. & E. NEWTON, Ibis, 1859, p. 258 (St. Croix).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas); *ib.* BREWER, p. 308 (1860) (Cuba).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 602 (Porto Rico).—LAWR. Pr. U. S. Nat. Mus. I, p. 197 (1878) (St. Vincent); *ib.* p. 238 (Antigua); *ib.* p. 242 (Barbuda).—CORY, Bds. Bahama I. p. 153 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 115 (1881).—CORY, List Bds. W. I. p. 26 (1885).

Macrotarsus nigricollis GUNDL. J. f. O. 1856, p. 422 (Cuba); *ib.* Repert. Fisico-Nat. Cuba, I. p. 357 (1866); *ib.* J. f. O. 1874, p. 113 (Porto Rico); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 377 (1878) (Porto Rico).

Himantopus mexicanus SALLÉ, P. Z. S. 1857, p. 237 (San Domingo).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 97 (1867) (San Domingo).—CORY, Bds. Haiti & San Domingo, p. 146 (1885).

Common in the Bahamas and Antilles.

GENUS *Recurvirostra* LINN.*Recurvirostra* LINNÆUS, Syst. Nat. I, 10th ed. p. 151, 1758.✓ *Recurvirostra americana* Gmel.

Recurvirostra americana Gmel. Syst. Nat. I. p. 693 (1788).—GOSSE, Bds. Jam. p. 387 (1847).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—GUNDL. J. f. O. 1862, p. 88 (Cuba).—ALBRECHT, J. f. O. 1862, p. 206 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 357 (1866); *ib.* J. f. O. 1875, p. 330 (Cuba)—A. & E. NEWTON, Handb. Jamaica, p. 115 (1881).—CORY, List Bds. W. I. p. 26 (1885).

Recorded from Cuba and Jamaica.

(To be continued.)

 A NEW RACE OF THE SHARP-TAILED SPARROW
(*AMMODRAMUS CAUDACUTUS*).

BY JONATHAN DWIGHT, JR.

SEVERAL years ago I obtained in New Brunswick, near the head of the Bay of Fundy, three Sparrows that I labelled *Ammodramus caudacutus*, as a matter of course. They lay unnoticed in my collection until one day last summer, when I was struck by their faded and faintly streaked appearance as compared with New York specimens at the same season. My suspicions were aroused, and during the summer and fall, which I was able to spend in the same locality, I obtained a series of these birds showing so clearly all changes of plumage that I decided to investigate as much other material as I could gather with the help of kind friends. My thanks are due to Messrs. J. A. Allen, Montague Chamberlain, H. W. Henshaw, Robert Ridgway, Geo. B. Sennett, and Dr. A. K. Fisher, for the large series of Sharp-tailed Sparrows now before me,—114 specimens in all. It confirms me in the belief that my birds represent a good geographical race, which forms the connecting link between true *caudacutus* and the inland race *nelsoni*, and it shows, moreover,

that in autumn all three forms are found scattered along the Atlantic coast or near it, *nelsoni* occurring infrequently as far north as Cambridge, Mass., true *caudacutus* as far as Portsmouth, N. H., and the new form still farther north. I have no material from farther south than South Carolina, although Sharp-tails are known to occur in the Gulf States, and very likely all three races may be found there at the proper season. I propose naming the northern race

Ammodramus caudacutus subvirgatus, subsp. nov. ACADIAN
SHARP-TAILED SPARROW.

SUBSP. CHAR.—Similar in size and coloring to *A. caudacutus* but paler and much less conspicuously streaked beneath with pale greenish-gray instead of black or deep brown. Bill averages smaller. Compared with *nelsoni* it is much paler and grayer, generally larger and with a longer bill.

Adult ♂ in breeding plumage (No. 1261, Hillsborough, Albert Co., New Brunswick, July 19, 1886; J. Dwight Jr.) :—Above ashy-gray tinged with olive, the dorsal feathers, scapulars, and three innermost secondaries or tertials largely brownish-black edged with whitish. Greater and middle wing-coverts ashy, with a blackish subterminal spot along the shaft of each feather. Primaries and secondaries brown, edged with greenish-gray fading to white on first primary. Broad superciliary and maxillary stripes pale buff, whitish above the eye, and orange tinged where they meet at a dark brown spot (the extension of a post-ocular streak) just posterior to the ashy auriculars. Bordering the superciliary stripes the head is pale yellowish-brown mixed with black streaks and divided by an ashy-gray median stripe which extends down to and over the sides of the neck in a sort of collar, tinged on the hind neck with pale orange-brown. Faint spot above and below the eye and rictal streak dusky; sides of throat with ashy bridle. Jugulum, sides, and flanks faintly suffused with buff and lightly streaked longitudinally with pale greenish-gray, darker on flanks, the streaking losing itself in the dull white of the breast and sides of the abdomen. Rest of underparts grayish-white. Edge of wing pale lemon. Tail ashy, dusky along shafts of feathers and faintly barred. Upper tail-coverts streaked with dusky. Bill bluish black, under mandible bluish-slate, pinkish at base; tomia whitish. Feet purplish-flesh. Iris dark hazel. Wing,* 59.4; tail, 48.8; tarsus, 20.6; middle toe and claw, 20.8; bill from nostril, 8.6.

Adult ♀ in breeding plumage (No. 1239, same locality and collector, July 15, 1886) :—Resembling closely the male but with richer yellow-buff, orange tinged across the jugulum and about the head, and with secondaries, tertials, and wing-coverts conspicuously edged with pale russet in-

*All measurements in millimeters.

stead of grayish. Wing, 54.1; tail, 44.7; tarsus, 19.8; middle toe and claw, 21.3; bill from nostril, 8.9.

Adult ♂ and ♀ in autumn (Nos. 1500, ♂, and 1502, ♀, same locality and collector, Sept. 30, 1886):—Coloring everywhere richer, grayer, and greener than in breeding dress, but streaking fainter and grayer. Above rich greenish-gray, the dorsal feathers and scapulars greenish-brown (instead of nearly black), flecked with dusky, and edged with delicate pearl-gray (instead of whitish). Tertiaries, secondaries, and wing-coverts russet, edged like the female in breeding dress. Primaries nearly black, edged exteriorly with bright olive-green nearly to tips, except first primary, which is edged with white. The brown of the head and the gray of the median line and neck are richer, and the cervical collar greener. Superciliary stripe intensified into a yellow spot on the eye-brow. A deep greenish wash above the eye extends backward and loses itself in the superciliary stripe. The buff of the breast and sides is brighter, and the streaking is pale lead gray in broader stripes. Edge of wing bright yellow. Lesser wing-coverts and alulae edged with yellowish-green, the longest feather of the alula dusky, edged with white.

Young of the year:—Identical in plumage with autumn adults, but with slightly smaller bill.

Young, first plumage (No. 1240 ♂, same locality and collector, July 15, 1886):—General color chestnut-buff, darker above and variegated with black. Traces of two or three faint dusky streaks on sides. Dorsal feathers, tertiaries, wing-coverts, and stripes on the head, black with chestnut-buff edging. Primaries and secondaries black, faintly edged with ashy. Traces of dusky auriculars and post-ocular streak. Tail similar to adult but edged with buff. This plumage is worn until the autumn dress of the adult is assumed.*

HABITAT. Marshes of southern New Brunswick, Prince Edward Island, and probably Nova Scotia, and southward in migration along the Atlantic coast.

Measurements. Twenty-five ♂ and thirteen ♀, all adults, show the following averages and extremes: Length, † ♂ 142.5 (135.9-147.3); ♀ 138.4 (135.9-141.); extent † ♂ 201.7 (193.-209.6); ♀ 192.3 (190.5-195.6); wing, ♂ 58.2 (55.6-59.7); ♀ 54.6 (52.8-56.1); tail, ♂ 50.5 (47.2-53.3); ♀ 46.7 (42.9-50.3); tarsus, 20.8 (19.8-21.6); bill from feathers, 11.7 (10.4-12.5), from nostril, 8.8 (8.1-9.1), depth at nostril, 5.3, width, 3.8.‡

* Compare first plumage of *A. caudacutus* (Brewster, Bull. N. O. C., III, 1878, 119). Seven specimens that I have examined all show more or less distinct streaking.

† Fresh specimens—11 males, 4 females.

‡ The following measurements will prove useful for comparison: *A. caudacutus*, 34 adults: Length, male, 149.1 (144.8-157.5); female, 135.9 (129.5-142.2); extent, male, 205.7 (203.2-213.4); female, 191 (177.8-200.7); wing, male, 58.7 (57.2-62.); female, 55.6 (53.6-57.4); tail, male, 48.5 (43.9-52.1); female, 47 (44.5-50.3); tarsus, 20.6 (19.3-21.8); bill from feathers, 12.2 (11.4-13.2), from nostril, 9.4 (8.9-10.2), depth at nostril, 5.3; width, 4.1.

A. c. nelsoni, 24 adults: Length, male, 140.2 (134.6-144.8); female, 135.9 (134.6-137.2)

This new form is not likely to be confounded with true *caudacutus*, for, so far as my material shows, the palest streaked *caudacutus* in any plumage may be recognized at a glance by being more distinctly streaked than any specimen of *subvirgatus*. More material from suitable localities will no doubt show intermediates, but as yet I have seen no connecting links at this end of the chain. At the other end, however, *subvirgatus* passes gradually into *nelsoni*, as a series of fall specimens clearly shows. I have been unable to obtain any spring *nelsoni* for comparison, but judging by the changes of plumage in the other two forms, *nelsoni* ought to be a much brighter and more richly colored bird than *subvirgatus* in like plumage. This is the case with fall specimens, and the points of difference are usually well defined. Compared with the new form at this season, *nelsoni* is characterized by the rich brown of the back with white edging of the feathers, instead of greenish gray with pearl-gray edging; by the deeper brown of the head; by the richer russet of the wing-coverts and inner secondaries, and broader rusty edging of the tertials as compared with whitish or buff; by the brighter orange-buff of the jugulum in sharp contrast to a whiter breast and abdomen than *subvirgatus* shows; by distinct (sometimes indistinct, however,) narrow streaks of black or dusky on jugulum and sides in place of broad indistinct gray stripes; by smaller size; by a bill not over 8.4 mm., and generally by a shorter wing.

It is difficult to indicate by description differences that are obvious with specimens in hand, but a preponderance of the characters just given ought to determine without actual comparison all save a few perplexing intermediates. Measurements will often aid in determining these, but with a species like the Sharp-tailed Sparrow that soon wears its plumage ragged and disreputable among the coarse grasses it frequents, measurements, particularly of the tail, are not altogether reliable. The length of bill in *nelsoni* seems to be a pretty good character, as *subvirgatus* (except in young of the year) seldom has as short a bill. To be sure, the differences are slight but quite noticeable to the eye, nevertheless. Although the largest bill of *nelsoni* never equals

extent, male, 198.9 (193.-203.2); female, 193 (190.5-195.6): wing, male, 56.1 (53.9-57.7); female, 54.4 (52.1-56.4): tail, male, 48.3 (45.5-52.1); female, 47.5 (44.5-50.3): tarsus, 20.1 (19.1-20.8): bill from feathers, 10.7 (10.2-11.2), from nostril, 8.1 (7.6-8.4) depth at nostril, 5.1, width, 3.8.

the smallest bill of *caudacutus*, the bills of the three forms intergrade, and it is the short-billed specimens of the new form that are likely to give the most trouble. I notice that nearly all *nelsoni* have lighter colored bills (especially the lower mandible, which is buff) than the majority of specimens of the new race, which generally has both mandibles slaty, but I fear no dependence can be placed upon this fact.

A series of Sharp-tails obtained in the autumn at Sing Sing, N. Y., by Dr. Fisher, is of special interest. From typical *nelsoni*, as rich in color as those obtained in Illinois, these birds show a gradual and complete gradation into *subvirgatus*, the brown of the head and back, and deep buff of the jugulum becoming paler, the white edging of the dorsal feathers passing into gray, and the streaking of the jugulum fading into gray, until the imaginary line dividing all subspecies has been passed and the characters of *subvirgatus* are seen to predominate.

It is to be regretted that the specimens from which I have selected my spring types are in worn and faded plumage, but comparing them with four specimens taken respectively at Point Judith, R. I., April 29, N. Madison, Conn., June 9, Cambridge, Mass., May 31, and Hampton, N. B., June 21, and with two labelled New Jersey, I find them almost identical in coloring and amount of wear. I notice that my summer males are generally paler above and less buffy beneath than the females, although a few of the latter are paler than the brightest males. Can it be that the males expose themselves more to the sun for the sake of singing to their mates, who assume the household cares of a shady nest amid the long grass?

The N. Madison and the Cambridge specimens just referred to have the shortest bills (only 8.1 mm.) of any *subvirgatus* in the series at hand, and the latter has been recorded as *nelsoni*. (Henshaw, Auk, III, 1886, 486.) It is labeled "♂ juv.," which may, perhaps, account for the short bill, and the buff beneath is brighter than the average of the new race, but the pale coloring of the upper parts is identical with my New Brunswick birds. The N. Madison specimen, an adult female, is undoubtedly of the new race and a trifle paler than the Cambridge bird. These two, taken in connection with other short-billed specimens obtained at Cambridge and at Sing Sing in the fall, suggest the inquiry whether some inland marshes may not

furnish a regular supply of connecting links between *nelsoni* and the new race, which is certainly more closely related to *nelsoni* than to true *caudacutus*. It may not be out of place to say here that the latter in fall plumage is more heavily and broadly streaked than in the spring, the orange-buff about the head and on the jugulum and sides, much intensified, but otherwise very much like the spring bird. Its long bill alone (8.9-10.2 mm.) will distinguish it from *nelsoni*, and the streaking from *subvirgatus*.

Strange to say, *nelsoni* was originally described by Mr. Allen (Proc. Bost. Soc. Nat. Hist., XVII, Mar. 1875), as having "a longer and slenderer bill" than *caudacutus*, an error that is repeated in the latest edition of Dr. Coues's 'Key'. The bird described was in fall plumage and the description of this clearly indicates the character of *nelsoni* at that season.

I discuss the subject of Sharp-tails at length because it has been one involved in some obscurity, and because several records have been made that will no doubt now require to be revised. It was not until 1877 that this species was recorded as far east as Maine, Mr. Brown having found it at Scarboro' in October, 1876 (Bull. N. O. C., II, 1877, 27 and 98), while Mr. Brewster recorded it from Tignish, P. E. I., August 2 and 3, 1876 (*Ibid.* II, 1877, 28). I have seen some of the Tignish specimens, which are of course faded *subvirgatus*. It would be interesting to know what the Scarboro' specimens were. One taken there October 13, 1879, and now before me, is *subvirgatus*. Some remarks by Dr. Brewer (*Ibid.*, III, 1878, 48 and 147) are interesting, for *A. caudacutus* is spoken of as abundant on St. Andrew's Bay. As this is partly in New Brunswick, the birds found there may prove to be *subvirgatus*. In 1880 Mr. Brown records *caudacutus* as breeding at Scarboro' (*Ibid.*, V, 1880, 52). Which race was it? I will also call attention to an article by Dr. Brewer in the 'Oölogist'* for 1879, where reference is made to the northern range of the Sharp-tails (Bull. N. O. C.,

*The 'Oölogist' for April, 1879 (Bull. N. O. C., VI, 1881, 47, Minor Ornithological Paper No. 59), is incorrect in stating that *A. caudacutus* was found breeding near Boston. It was a complicated case of misunderstanding and wrong identification which I will not discuss here, but as a matter of fact the birds breeding were nothing more nor less than *A. s. savanna*. The salt meadow referred to was on the 'Back Bay', and was fairly haunted with egg collectors. I visited it several times, and the birds found breeding there were Savannah Sparrows and *not* Sharp-tails.

VI, 1881, 47). The first record for New Brunswick is made by Mr. Chamberlain who, with Messrs. Purdie and Daniel, obtained five individuals at Hampton, June 21, 1881 (*Ibid.*, VII, 1882, 104 and 122). One of these is now before me,—an undoubted *subvirgatus*. The last record I shall refer to is Mr. Henshaw's (*Auk*, III, 1886, 486) of three specimens of *nelsoni* taken at Cambridge, Mass. That of May 31, I have assigned on a previous page to the ranks of *subvirgatus*; the other two, which I have also examined, were taken October 7, and are undoubted *nelsoni*. Mr. Henshaw suggests that "those having Sharp-tailed Finches in their collections will do well to examine their series thoroughly." This is excellent advice to follow, and I earnestly hope that the new subspecies I propose will solve difficulties that have heretofore presented themselves.

The apparent scarcity of spring examples of this new variety suggests the idea (probably erroneous) that it follows an inland route of migration at this season, especially since its breeding haunts are practically fresh water and inland meadows. One accustomed to the salt marshes where true *caudacutus* makes its home would never dream of finding its northern representative inhabiting fields where the grass is knee deep, and where the Bobolink and the Savannah Sparrow find it dry enough to make their nests. And yet this is the character of the marshes along the Petitcodiac River where I have found the birds in considerable numbers. The Petitcodiac is one of the rivers emptying into the Bay of Fundy when the tide is running out. The Bay of Fundy appears to empty into these rivers when the tide is running in, and long stretches of red mud are rapidly covered with the incoming water which, rising forty feet and more, has acquired world-wide renown, especially in the geographies. The marshes were no doubt overflowed at one time by the tide, but are now protected by low dikes, and drained at low tide by numerous narrow ditches, so concealed by overhanging grass that the unwary collector is liable to disappear when he least expects it. The river, more than a mile in width at Hillsborough, is bordered by the marshes, which often extend over half a mile back from the dikes. In the midst of such surroundings I found the New Brunswick Sharp-tails last summer. They were abundant in certain spots, but not easy to find on account of their retiring dispositions. Even their song is inaudible at the dis-

tance of a few yards, and at its best is suggestive of the bird's being choked in the attempt. It resembles, as nearly as I can represent it, *lic*—*sē-ē-ē-ōop*, and the gasping *sē-ē-ē* is usually all that is heard unless one is very close to the soloist. It is usually delivered from the top of a weed, where, as the bird sits crouching, he presents an absurd appearance of ill-concealed fright. Sometimes he springs up into the air, particularly towards evening, and setting his wings floats down into the grass fairly gushing with song—such as it is. This performance may be compared with that of *A. maritimus*, for the songs of the two birds are modelled after the same pattern. But I must not take up any more space in describing habits that, so far as I have observed, are little different from those of true *caudacutus*. I was unable to discover any nests. I think, however, that two broods may be reared, as, on my arrival July 15, young were already on the wing, and it was almost impossible to find any females. I was not on the ground during August, but in September the birds were rather scarce. On September 30 they appeared in numbers, probably from some more northern locality, and on October 4 I saw the last of them.

I imagine they are found in their present environment because no salt marshes happen to be convenient. I frequently found them along a swampy brook fully a mile from salt water, fraternizing with Swamp Sparrows and Maryland Yellow-throats among the alder bushes. The locality on the Kenebecasis River, where Mr. Chamberlain obtained his specimens, is of similar character, and he informs me that the bird has been taken at Sackville, where the marshes are similar to, but much more extensive than those of the Petiteodiac. There is every reason to suppose that the bird is found in neighboring localities, but at present I cannot prove it. If I have been successful in introducing to notice a bird that has been fairly in our midst and yet not recognized as a stranger, I shall feel that my efforts have not been in vain, and I hope that this stranger, now that he presents his proper credentials, may not prove an unwelcome guest.

OBSERVATIONS IN WESTERN NORTH CAROLINA
MOUNTAINS IN 1886.

BY GEORGE B. SENNETT.

THE locality visited comprises Mitchell and Yancey Counties, North Carolina, and a small portion of Carter County in Tennessee. The greater part of the observations were made from three points in Mitchell County, N. C., viz., Bakersville, Cranberry, which is close to Tennessee line, and Roan Mountain, the summit of which marks the dividing line between the two States. Frequently a bird was flushed in one State and picked up in the other.

The altitudes varied from 2600 feet, the lowest, at Bakersville, to 6400 feet, the highest point of Roan Mountain; that of Cranberry, where I made the longest stay, being 3200 feet above the sea level. The country is densely wooded to the very tops of the peaks, and in general characteristics is so similar to that of Mount Mitchell and vicinity, as described by Mr. Brewster in 'The Auk' (Vol. III, No. 1, pages 97 and 98), that it is desirable to mention only two points of difference. First, the country in the immediate vicinity of Roan Mountain has not as many clearings as has that about the lower slopes of the Black Mountains some thirty or more miles to the south. Secondly, the summit of Roan has extensive table-lands, on which three kinds of vegetation are found, each growing in separate tracts. This vegetation includes groves of balsams (the name used by the inhabitants for spruce and fir trees); thickets of rhododendrons, which are most luxuriant and plentiful here; and tracts of the coarse, thick mountain grass, which grows in immense patches of from one to one hundred acres in extent.

The observations were made during two trips; the first extended from April 15 to 29 inclusive; the second from June 26 to September 4 inclusive. Of the seventy species of birds observed and noted I can claim but eight of them as additions to the lists for this State heretofore given in 'The Auk' by Messrs. Brewster and Batchelder (see Vol. III, Nos. 1, 2 and 3). A few things which are perhaps of interest in reference to the birds already recognized as of this region may also be presented here.

The following eight species have not before been noted from these mountains :

Totanus solitarius. SOLITARY SANDPIPER.—Saw several isolated pairs in April, July, and August, in altitudes from 2800 feet to 3500 feet; only once did I see three together, at the base of Roan Mountain, the altitude being 3200; one of these I shot and preserved.

Buteo lineatus. RED-SHOULDERED HAWK.—Several seen about Cranberry, 3200 feet altitude; and one on Elk River, 3000 feet altitude. Breeds.

Falco columbarius. PIGEON HAWK.—Saw one on April 20, near Toe River, Yancey County.

Molothrus ater. COWBIRD.—On April 23, at Bakersville, saw several in company with Redwings in an orchard; again in August saw a few at Cranberry, but they were not common and none were observed in high altitudes.

Chondestes grammacus. LARK-SPARROW.—Shot a full grown young-of-the-year of this species on August 9 at Cranberry. When shot it was alone in the top of an aged apple-tree; altitude 3000 feet. The taking of this bird so far from its usual habitat was the most surprising event of the summer. Although no others were identified, it is only natural to suppose that this bird was reared not very far from where it was taken.

Zonotrichia leucophrys. WHITE-CROWNED SPARROW.—Only noticed two or three on April 23, on hills near Bakersville, and again on April 24, while making the ascent of Roan Mountain.

Dendroica palmarum hypochrysea. YELLOW PALM WARBLER.—Two shot and one female preserved; taken on the hills south of Bakersville on April 19; they were in a clump of young trees along with two or three Grass Finches (*Pooecetes gramineus*); altitude 3000 feet.

Regulus calendula. RUBY-CROWNED KINGLET.—A pair of these birds, in immature plumage, was shot at Plum Tree, Mitchell County, April 18, when in company with several more, and the male preserved. Shot several in Yancey County on April 21; altitude 3500 feet.

A partial record of my observations of certain birds already noted as of this locality may be interesting.

Philohela minor. WOODCOCK.—I saw a pair of these birds on the summit of Roan in a clump of balsams: the overflow from numerous springs which had their sources at this spot formed an open adjoining marsh of several acres; altitude fully 6000 feet. One or two pairs have been known to breed here every year. Shot a pair of birds of the year at Cranberry, August 27.

On April 27, I saw with my field glass a fine adult *Buteo borealis* (Red-tailed Hawk) sail up the side of Pizzle Mountain, four miles east of Bakersville, and alight on a tree near the summit; altitude fully 4500 feet. This is the highest elevation in which any were observed.

Falco sparverius. SPARROW HAWK.—Quite common near Bakersville; a pair found breeding in a large chestnut tree at an altitude of 3000 feet on the 23d of April.

Trochilus colubris. RUBY-THROATED HUMMINGBIRD.—These were seen frequently on Roan Mountain in June and July; altitude 6300 feet. While at Cranberry, in August, altitude 3200 feet, they were more numerous than I had ever seen them elsewhere.

Two Hairy Woodpeckers were taken; one was shot in a clump of balsams on the top of Roan Mountain, altitude 6300 feet, July 13, and the other at Cranberry, altitude 3000 feet, August 13; both are females, and although rather intermediate between the southern and northern forms, yet more like the southern, and I call them *Dryobates villosus auduboni*.

Dryobates pubescens. DOWNY WOODPECKER.—A female was shot on the southern slope of Roan Mountain; altitude 6100 feet.

Sturnella magna. MEADOW LARK.—One observed on the summit of Roan Mountain, April 25, at an altitude of 6300 feet.

Sphyrapicus varius. YELLOW-BELLIED WOODPECKER.—On April 25 shot a female in an opening in the balsams where timber had been cut away on the south side of Roan Mountain; altitude 6000 feet. Saw two or three more at about the same spot in July.

Melanerpes erythrocephalus. RED-HEADED WOODPECKER.—In June one was slightly wounded, but kept alive, on the top of Roan Mountain; taken at 6000 feet altitude. Only one other was seen on the summit of Roan, but in the lower altitudes of Cranberry and Yancey County they were occasionally seen.

Colaptes auratus. FLICKER.—These birds, though shy, were found as high as 5000 feet in April and August; secured several young but did not bring home an adult.

Loxia curvirostra minor. AMERICAN RED CROSSBILL.—Shot one close to the Roan Mountain Hotel, July 5; altitude 6300 feet. Saw and heard several flocks, but did not find them feeding commonly in the balsams; at Cranberry, in August, altitude 3200 feet, one or two flocks could be seen and heard daily feeding in the hemlocks.

Poocætes gramineus. VESPER SPARROW. — On April 19 I shot two females of this species on the hills south of Bakersville, in different localities, at an altitude of 3000 feet. At the same time I shot several others. An examination showed that the ovaries were undeveloped. They were fat and did not act as if they were migrating; yet they cannot be a common summer resident, for my later trip brought me to certain promising localities, but the marked white tail-feathers of this common northern bird were only conspicuous by their absence.

Junco hyemalis carolinensis. CAROLINA JUNCO.—This new variety of Black Snowbird I was prepared to see, and did find in all places above 3000 feet elevation; although not abundant at this last-named elevation, yet on the summit of Roan, at an altitude of 6300 feet, it is exceedingly abundant, outnumbering at this point all other species combined. I found them in the latter half of April when they were paired and building nests, but although many completed nests were discovered, I was not able to find any eggs up to the time (April 29) I left Roan Mountain at the close of my first trip. Although possibly at an elevation of from 3000 to

4000 feet a few sets may be found earlier, yet it is safe to say that in the mountains of North Carolina, May is the season for the first clutch of eggs. Being obliged to leave, I gave directions that a few sets with nests should be preserved for me, and on my return I not only obtained several sets laid in May, but secured additional ones of the second brood. In July, on Roan Mountain, I found both fresh-laid eggs and young in all stages; whenever the almost constantly present and low-hanging clouds would lift for an hour or so, I could deviate from the main road and find a Junco's nest. My experience told me that the first brood was generally four, but often three, while the second brood was three, and rarely four. I found these birds nesting on the ground in all sorts of places,—in the open among the grass hummocks, along the edge of a cowpath, among the rhododendrons, or myrtle tussocks (which look so much like the heather of Scotland), under the balsams, or under the deciduous trees of a lower altitude. Two nests, one of which was five and the other three feet from the ground, were found in balsam trees; and I found one nest at an altitude of two feet, in the roots of an overturned tree. Of the twenty nests and sets of eggs in my collection, no two are alike, either in size, shape, marking of eggs, or lining of nest. The nests are lined with hair of various colors, fine rootlets, red moss, and grass like that of which the body of the nest is formed. At Cranberry, in August, I found occasional pairs of adults and young of the year, but did not come across any nests. I brought back twenty-seven specimens, of all ages from the newly hatched to the adult. This number does not comprise all the specimens shot and examined, for in the lower altitudes in the spring I tried to secure typical *hyemalis*: I did not succeed in finding one. This seems to show that true *hyemalis*, which, together with *carolinensis*, winters there, does not remain as late as April 15, and therefore that the only form breeding in the mountains of Western North Carolina is *carolinensis*. That the two forms are intermingled along the Atlantic States I am led to believe on examining the series of eight males and six females in the collection of Mr. J. Dwight, Jr., of New York City. There is scarcely a typical *hyemalis* in Mr. Dwight's collection, and three males conform as closely, both in size and external characteristics, to *carolinensis* as if they had been taken on the high peaks of North Carolina. Mr. Dwight's three specimens are as follows:

No. 997, male, March 26, Rockaway Beach, L. I.; wing, 3.12; tail, 2.75; bill, .39.

No. 1002, male, April 1, Van Cortland, Westchester Co., N. Y.; wing, 3.13; tail, 2.90; bill, .40.

No. 1308, male, July 26, Albert Co., N. B.; wing, 3.07; tail, 2.80; bill, .45.

Average of 4 males, including type, of Mr. Brewster's specimens from North Carolina (see Auk, Vol. III, No. I, p. 108): wing, 3.165; tail, 2.78; bill to feathers, .435.

Average of 13 males in my collection from Roan Mountain, N. C.; wing, 3.15; tail, 2.87; bill to feathers, .41. Extremes: wing, 3.27-3.00; tail, 3.05-2.70; bill to feathers, .45-.36.

Average of *hyemalis*, 4 males from New England: wing, 3.02; tail, 2.66; bill to feathers, .405.

Since the building of the hotel on the summit of Roan Mountain, numbers of these Juncos remain there all winter. In the winter of 1885-86, although the thermometer registered 24° below zero, they were particularly numerous, feeding on the refuse from the kitchen and on the hayseed in the loft of the barn. A gentleman who had passed the winter in that bleak spot told me that on the coldest and stormiest days he could always see them, and they sometimes came into the house. When I was there in April I frequently saw as many as thirty about the kitchen door or barn-yard, and one that had flown in through the open window was caught alive for me in the dining-room. On April 29, at the close of my first visit, there were large bodies of snow and ice under the balsams where the sun could not reach, and two days after my departure there occurred a fall of snow which covered the mountain to a depth of several inches. In July it was generally wet, and the thermometer ranged between 50° and 60°, more frequently remaining in the neighborhood of from 50° to 55°.

Cardinalis cardinalis. CARDINAL GROSBEAR.—On April 29, while waiting for a team to take me down the mountain, I took my gun and two half charges of dust, and felt my way through the clouds down among the balsams on the northern slope of Roan Mountain; only a few rods from the hotel I secured and brought back a female Cardinal and a male Wren; altitude 6200 feet. Occasionally seen at lower elevations, but not abundant.

Ampelis cedrorum. CEDAR WAX-WING.—COMMON in July on the southern slope of Roan Mountain, among the scattered balsams where timber had been cut away; altitude 6200 feet.

Mniotilta varia. BLACK-AND-WHITE CREEPER.—On July 27, during a storm which was raging at ten o'clock in the evening, this bird flew against the window of the hotel on Roan Mountain and was caught alive. This species is common at the base of the mountain.

Galeoscoptes carolinensis. CATBIRD.—Two of this bird's nests with eggs were brought me, having been taken at Carver's Gap, Roan Mountain, at an altitude of 5400 feet.

Troglodytes hiemalis. WINTER WREN.—COMMON in the balsams of Roan Mountain; at all hours, rain or shine, the exquisite song of this shy bird could be heard even from the balcony of the hotel. I remember hearing four males at one time from as many different directions. I was constantly in search of their nests, and frequently saw them carrying building material, and food to their young, but the clouds, which were only absent at long intervals from the summit of the mountain, would close about me like a veil and I would be obliged to practically feel my way home again, always unsuccessful.

Certhia familiaris americana. BROWN CREEPER.—On April 24, while ascending Roan Mountain from Bakersville, on the south, saw plainly a pair of these birds building their nest in the loose bark of a tree close by a road which wound through heavy timber, at an altitude of 4500 feet.

Parus bicolor. TUFTED TITMOUSE.—Everywhere common up to about 4000 feet elevation. At Bakersville and Cranberry I seldom took a stroll without hearing the whistle of this bird or seeing it with its young.

Parus carolinensis. CAROLINA CHICKADEE.—This bird was not frequently seen, and not observed at all above 5000 feet altitude.

Regulus satrapa. GOLDEN-CRESTED KINGLET.—On July 23, shot a young of the year at an elevation of 6000 feet; it was in company with the rest of the brood and the parents. Not common.

Merula migratoria. ROBIN.—Rarely seen in the lowlands, but common on the summit of Roan Mountain, where I found two nests with eggs in the balsams; altitude 6300 feet; others were brought to me which had been taken in the woods far from any habitation.

DESCRIPTION OF A NEW *EUETHIA* FROM OLD PROVIDENCE ISLAND.

BY CHARLES B. CORY.

Euethia grandior, sp. nov.

SP. CHAR. — General appearance of *E. bicolor*; but larger, the wing is much longer, and both mandibles are black.

Adult ♂ (Type, No. 10,274, Coll. C. B. Cory): — Head, throat, breast, and upper belly black; a patch of dull yellowish white from the belly to the vent; flanks and under tail-coverts dull olive green; back and rump olive green; quills brown, edged with olive green; tail greenish above, slaty brown beneath, and showing numerous indistinct bands when held in the light; bill black.

Length, 4.50; wing, 2.45; tail, 2; tarsus, .60; bill, .40.

The great length of wing seems to be constant in sixteen specimens from Old Providence. I have compared it with forty-four examples of *E. bicolor* from other localities.

Habitat. Island of Old Providence, Caribbean Sea.

RECENT LITERATURE.

The New Canadian Ornithology.*—Decidedly the best we have is this

*The | Birds of Ontario, | Being a list of Birds observed in the Province of | Ontario, with an Account of their Habits, | Distribution, Nests, Eggs, &c., | —By— | Thomas McIlwraith, | Superintendent of the Ontario District | for the | Migration Committee of the American | Ornithologists' Union | — | Published by the Hamilton Association. | — | Hamilton: | A. Lawson & Co., Printers, 10 York Street. | — | 1886. 1 vol. 8vo. pp. 1-304, i-iv, i-iv, i-vii.

work of a veteran observer, who, if not a prolific writer, has nevertheless maintained his interest in ornithology for a quarter of a century, in the light of which experience he now treats of the birds of Ontario. Mr. McIlwraith was in the field in 1860 and 1861, when he published* notices of the birds of Hamilton, afterwards systematized in a 'List of Birds observed near Hamilton, Canada West'†, noting 241 species as a result of ten years' observation. This present work is the outcome of an address 'On Birds and Bird Matters' delivered before the Hamilton Association April 2, 1885, when the author promised to prepare a freely-annotated list of the birds of that locality. He was then busy in hunting up Canadian observers for the Migration Committee of the A. O. U., and in position to sound the depths of the ignorance of ornithology among persons fairly well informed on things in general. In due process of evolution the matter took the present shape of a systematic manual of the subject, such as would enable any one to identify the birds that should be met with in Ontario. The Hamilton Association published the address in their 'Proceedings' of one year, and the history of each species the next, the present volume being the result.

The work treats formally of upwards of 250 species (as we judge, without actually counting them), giving first a concise technical description, then the general habitat, and a formal statement of the nest and eggs, followed by local biographical items. Such a work cannot fail to prove of interest and usefulness. It places Canadian Ornithology more nearly *au courant* with the progress of the science in other parts of America, and easily advances its author to the first place in his own field. We could wish it wore a more attractive face typographically, but the sad printing, perhaps unavoidable under the circumstances, lessens the value of no scientific facts which the book presents.—E. C.

McIlwraith's Birds of Ontario.—At the request of a few of the prominent members of the A. O. U., I have prepared the following notes concerning the 'Birds of Ontario', by Thos. McIlwraith, Hamilton, Ont., pointing out and correcting some errors which have occurred in that work.

The eggs of the Bob-white are described as pure white, no mention being made of the characteristic stains of light buff which are almost invariably found.

Those of the Ruffed Grouse are buff, not cream-color, as stated.

The Marsh Hawk is said to lay white eggs "blotched or speckled with brown," but in reality its eggs are nearly always pure white, sometimes with a few spots, but probably never blotched.

Those of the Baltimore Oriole are stated to be "white, faintly tinged with blue," but no mention is made of the lilac, brown, and black spots and streakings which render this egg one of the most beautiful we have in Ontario.

* Canad. Nat., V, 1860, pp. 387-396; VI, 1861, pp. 6-18, 129-138.

† Proc. (Comm.) Essex Inst., V, 1866, pp. 79-96.

The Red-eyed Vireo is stated to lay eggs "white . . . sometimes . . . a few dark spots towards the larger end." These eggs are *always* thinly spotted with black and dark brown.

The white ground color of the eggs of the Redstart is called grayish-white, to which color these eggs can lay no claim whatever.

Loon's eggs are described as "dull greenish-yellow with numerous spots of brown," while they are olivaceous brown sparingly spotted with dark brown.

The number of eggs in a set is frequently misstated, as for instance the Vesper Sparrow and the Chippy both have "Eggs, 4 to 6." In each case 3 to 4 would be more correct, five being extremely rare, and six have probably never been found in Ontario.

The nests and nesting sites are wrong in several instances, the two Grebes, Horned and Carolina, being said to lay on the "bog," the latter making a nest of "a few matted rushes on the bog." Mr. J. A. Morden and myself have examined many nests of the Carolina and some of the Horned Grebe, and can say positively that both of them build a large nest of rushes which reaches nearly or quite to the ground, and is surrounded with water from six to twelve inches deep, the nests being generally placed where the surrounding rushes are thin, so that the young have easy access to water.

"Nest, if any, in a hollow tree or cleft of rock" is accredited to the Great Horned Owl. Almost invariably they use a nest similar to that of the Red-tailed Hawk, no instance having yet come under my notice where it has used a hollow tree or cleft of rock.

Speaking of the Pewee, no mention is made of its nesting among the roots of a fallen tree, where probably half the nests in Ontario are made, this bird being quite common in the woods and numerous nests having been found in that position.

The American Merganser is stated to be "never plentiful." On the inland waters near London it is by far the most common of the Mergansers.

A lamentable error has occurred with the two White Herons, *Ardea egretta* and *A. candidissima*, the titles having evidently been misplaced. That this should have occurred seems almost impossible, but is proved by the fact the description, abundance, and even the repeated name under the heading "American Egret" belong to the Snowy Heron, and *vice versa*.

There are two instances given of the capture of the Yellow Rail in Ontario, and it is left to be inferred that those constitute its sole occurrence here. From a number of specimens taken in the marshes near the west end of Ontario I conclude that it is regular though quite rare.

The Curlew is stated to be "occasionally seen . . . as an irregular visitor and not in large numbers." In suitable places it occurs regularly and in considerable numbers, and on May 24 and 25, 1887, I saw hundreds at Rondeau, where they are probably as common as anywhere on our shores.

The Pileated Woodpecker is relegated to Muskoka, except for mention of one pair which were found nesting in Middlesex County, whereas they are rather common in most of the heavy timber in the western counties, where they breed.

Both the Cowbird and the Baltimore Oriole are stated to disappear from Southern Ontario in July and August, this being noted as a strange peculiarity of these birds. A little inquiry would have disproved these ideas, as both birds are common around London through both months, and also probably in all Southern Ontario, where they breed plentifully.

The date of arrival is often wrong, for instance, the Vesper Sparrow and Chippy being credited with arriving about the end of April. My average date of arrival for a number of years, for the Vesper Sparrow is April 10, for the Chippy April 20, while for the Towhee and Field Sparrow, which are stated to arrive about the first of May, my average is April 10 and 22, respectively, the former sometimes coming late in March while snow is yet to be found.

The Grasshopper Sparrow, though stated to be casual and very rare, I have no doubt breeds in the southwest of Ontario, where I have found it in different localities, notably at Point Pelee, where it was heard singing every day in early June, and was comparatively common.

Mr. Mellwraith refers to me as the sole evidence of the occurrence of the Rough-winged Swallow, and makes the statement that I have found it breeding for the past year or two; while in 1882, in the Morden-Saunders list of the birds of Western Ontario, we stated that it "breeds in same localities as the last" (Bank Swallow), and I have found it common within a radius of twenty-five miles around London in all suitable places. He follows the reference to me by stating, "nests having been found in crevices of rocks and on beams under bridges," etc., from which one might infer that such are its habits in Ontario. This, however, is not the case, as in the large number of nests I have examined all were in holes in banks, and I have never seen these Swallows frequenting bridges at all, but always near sandbanks: and we have no rocks.

Speaking of the Black-poll Warbler, the statement is made, "The musical powers . . . are not exercised in this latitude." In contradiction to this, I have never yet seen or taken a male in spring except those I have found by their song.

The Water-Thrush is said to be "quite as abundant throughout the country" as the Ovenbird, which, for the west at least, is a great error. The Ovenbird is abundant, while the Water-Thrush is not at all common, being found in almost exactly the same numbers as the Louisiana Water-Thrush, but in my experience the localities frequented by the two species are exactly opposite to those stated, the Water-Thrush never being far from water, often being on the very banks of streams, while the other is found in moist high woods, water being apparently no requisite for its happiness.

With regard to the Olive-backed and Gray-checked Thrushes, the ratio of specimens obtained by me has been three Gray-checked to one Olive-

backed, which latter I have taken while singing, contrary to the statement made that while here they have only a low, soft call-note.

That so large a number of errors should have crept in is to be deplored, especially as many seem to be easily avoidable, but that the work will be of the greatest service to the class for whom it is intended cannot be doubted, many ornithologically-inclined friends having inquired anxiously for its appearance, as it was just what they needed to aid them in the study of our birds.—W. E. SAUNDERS.

Stejneger on the Species of *Pardalotus*.*—This paper relates especially to the forms recognized by Mr. Sharpe (Cat. Bds. Brit. Mus., X, 1885, p. 54) as *Pardalotus ornatus*, *P. assimilis*, and *P. affinis*, *assimilis* being here considered as a subspecies of *affinis*. A 'Key to the Species' of this genus is appended, of which eight and one subspecies are recognized, seven of which are represented in the collection of the National Museum.—J. A. A.

Stejneger on Two European Thrushes.—Dr. Stejneger, in a paper † of eight pages, maintains the existence in Europe of two species of Ring-Ouzel, namely, the 'Northern Ring-Ouzel' (*Turdus torquatus* auct.), and the 'Alpine Ring-Ouzel' (*Turdus alpestris* Brehm); the first a northern-breeding bird, migrating south in winter; the other supposed to breed in the high mountains of Central and Southern Europe. The two forms occur together in winter, and have been hitherto confounded by nearly all writers, although well distinguished by Brehm. He says: "It has been the unfortunate fashion to sneer at the species and subspecies of Brehm, and the simple fact that a name was established by him has been sufficient reason to ignore it altogether and to put it into the synonymy without further investigation. This is not only injustice to Brehm's honest labor and his extreme power of discrimination, but it has resulted in absolute injury to science."—J. A. A.

Stejneger on Japanese Birds.—In the 'Proceedings' of the U. S. National Museum Dr. Stejneger continues his 'Review of Japanese Birds,' ‡ Part II treating of the ' Tits and Nuthatches,' and Part III of the ' Rails, Gallinules, and Coots.' In the first paper six species of *Parus* are recognized, two of *Ægithalos*, one of *Remiza* (gen. nov.), and one of *Sitta*, with two additional subspecies, one of which (*Sitta amurensis clara*) is described as new. Synopses are given of the genera and species, the synonymy is

* Notes on Species of the Australian Genus *Pardalotus*. By Leonhard Stejneger. Proc. U. S. Nat. Mus., 1886, pp. 294-296. (Dated Oct. 19, 1886; received by the reviewer Feb. 14, 1887.)

† On *Turdus alpestris* and *Turdus torquatus*, two distinct species of European Thrushes. By Leonhard Stejneger. Proc. U. S. Nat. Mus., 1886, pp. 365-373. (Dated Oct. 30, 1886; received by the reviewer Feb. 14, 1887.)

‡ Review of Japanese Birds. By Leonard Stejneger. II.—Tits and Nuthatches. Proc. U. S. Nat. Mus., 1886, pp. 374-394. III. Rails, Gallinules, and Coots. *Ibid.*, pp. 395-408. (Dated "Oct. 20, 1886"; received by the reviewer Feb. 14, 1887.)

discussed in detail, and the relationships of the different forms carefully considered.

In Part III the Rails and their allies are similarly treated, of which four species are referred to *Porzana*, one to *Rallus*, one to *Gallinex*, one (o presumed occurrence) to *Amaurornis*, one to *Gallinula*, and one to *Fulica*.

Dr. Stejneger has also published a paper on a collection of birds made in the Liu Kiu Islands, Japan, by Mr. M. Namiye,* containing descriptions of five new species and one new genus, as follows: *Treron permagna*, *Hypsipetes fryeri*, *Icoturus namiyei* (gen. et. sp. nov.), *Chelidon namiyei*, and *Pericrocotus tegimæ*. *Megascops elegans* (Cass.) is added to the Japanese fauna, and its relationship to *M. japonicus* is discussed at length.—J. A. A.

Blakiston on the Water-Birds of Japan. †—In a paper of nine pages Mr. Blakiston discusses in a very interesting way, the distribution of the Water Birds of Japan, the character of their distribution being indicated by two tables, prefaced by three pages of explanatory remarks and a discussion of the facts presented in tabular form. The first table includes all the Water Birds of Japan, including the Kurils, Bonins, and other outlying islands. The 94 species are arranged in four columns, according to their distribution, as 'circumpolar', 'Palæarctic', 'East Asiatic', or 'Pacific'. The second table exhibits, so far as available data will permit, "the distribution of Sea-birds peculiar to the North Pacific." These, numbering 60 species, are distributed in three columns, under the heads 'Only on the Asiatic side', 'Common to both sides', and 'Only on the American side'. From this table it appears that twice as many birds are peculiar to the American side as to the Asiatic side, but this disproportion, as Mr. Blakiston observes, may be more apparent than real, owing to the ornithology of the eastern side being much better known than that of the western side. The tables are followed by several pages of critical and technical remarks on many of the species enumerated.—J. A. A.

Wells and Lawrence on the Birds of Grenada, West Indies.—For the last three years Mr. Wells has been sending specimens of the birds of the Island of Grenada, West Indies, to Mr. Lawrence for identification, from which has resulted the present 'Catalogue' ‡ of ninety-two species of the birds of the island. As Mr. Lawrence states, in a prefatory note, "Mr. Wells enumerates thirty-eight species more than are given by Mr. Ober in his catalogue of the birds of Grenada. He procured all the species obtained or seen by Mr. Ober, and four he had not identified have been determined.

* On a Collection of Birds made by Mr. M. Namiye, in the Liu Kiu Islands, Japan, with descriptions of new species. *Ibid.*, pp. 634-651. (Dated Feb. 14, 1887; received March 17, 1887.)

† Water-Birds of Japan. By J. W. Blakiston. *Proc. U. S. Nat. Mus.*, 1886, pp. 652-660.

‡ A Catalogue of the Birds of Grenada, West Indies, with observations thereon. By John Grant Wells, of Grenada. Edited by George N. Lawrence. *Proc. U. S. Nat. Mus.*, 1886, pp. 609-633. Signatures dated Feb. 11, 1887.

Of most of the species he has given very full and interesting notes of their habits. Mr. Wells has proved himself to be a most diligent collector and careful investigator, the result being, besides the greatly increased number of birds added to the fauna of Grenada, the discovery of three species new to science and of eleven species not before noted from the Lesser Antilles."

Mr. Wells's very full and interesting biographical notes are often supplemented by technical remarks by Mr. Lawrence, including the description of one new species (*Blacicus flaviventris*), and of the male of *Engyptila wellsii*. Mr. Lawrence has since described a fourth species (*Margarops albiventris*),* making twelve species described by Mr. Lawrence from collections made by Messrs. Ober and Wells in the Island of Grenada.—J.A.A.

Ridgway Ornithological Club.—Bulletin No. 2 of this Club, which seems to be in a prosperous state, contains a short history of the Club, by the editor, Geo. L. Toppan, the Constitution and By-Laws, and the following papers: 'Notes and Observations on the Ornithology of Corpus Christi and Vicinity, Texas,' by Josiah L. Hancock; an annotated list of 91 species observed from March 16 to April 1, 1884. 'Geographical Variations between *Chondestes grammacus* (Say) and *Chondestes grammacus strigatus* (Swains.),' by H. K. Coale, in which the distinctness of the two forms is maintained. 'List of the Birds found breeding within the corporate limits of Mt. Carmel, Illinois,' by Robert Ridgway, noting 85 species, and concluding with a comparison of the breeding birds of that locality and of Washington City. The number of breeders in the vicinity of Mt. Carmel is stated to be 122; of Washington, 106. 'Notes on the Birds of Southern California and Southwestern Arizona,' by G. Frean Morcom; 139 spp., with extended observations on certain Hummingbirds. '*Ammodramus beldingi* Ridgw. (Belding's Marsh Sparrow),' by B. T. Gault, descriptive and biographical. 'A Contribution to our knowledge of Albinism,' by Geo. L. Toppan; discussion of this affection and list of upwards of 150 species in which it has been observed. '*Dryobates nuttallii* (Gamb.) Nuttall's Woodpecker,' by B. T. Gault; biographical. 'Description of a new species and subspecies of the genus *Dendroica*,' by H. K. Coale. The latter is *D. aestiva morcomi*, p. 82, from the western province of North America; the former is *D. dugesi*, p. 83, from Guanajuato, Mexico.—A list of officers, etc., closes this interesting Bulletin.—E. C.

Publications Received.—Blasius, Rudolf. (1) Der Wanderzug der Tannenheher durch Europa im Herbste 1885 und Winter 1885-86. Eine monographische Studie. (Ornis, Jahr. II, 4 Heft.)

Carpenter, F. H. A record of the breeding of *Vireo solitarius*, *Spiza americana*, and *Dendroica carulescens* in Bristol County, Mass. (Publ. Bristol Co. Orn. Club, No. 3, 1887.)

Clark, Hubert L. The Birds of Amherst and Vicinity, including nearly the whole of Hampshire County, Mass. Amherst, Mass., 1887, Svo. pp. 56.

*Description of a New Species of Thrush from the Island of Grenada, West Indies By George N. Lawrence. Ann. New York Acad. Sci., Vol. IV, 1886, pp. 23, 24.

Dubois, Alph. Description de deux nouvelles espèces d'Oiseaux. (Ext. du Bull. du Mus. roy. d'Hist. Nat. de Belgique.)

Lawrence, G. N. Description of a New Species of Thrush from the Island of Grenada, W. I. (Ann. N. Y. Acad. Sci., IV. pp. 23, 24, 1887.)

Leverkühn, Paul. Ornithologische Exkursionen im Frühling 1866. Von Clausthal nach Kiel. (Monatschrift des Deutschen Vereins zum Schutze der Vogelwelt, XI Jahr. pp. 241 et seq.)

Meyer, Dr. A. B., und Dr. F. Helm. Jahresbericht (1885) der orn. Beobachtungsstationen im Königsreichs Sachsen. Dresden, 1886, pp. 82.

Moseley, E. L. List of the Birds, Mammals, Birds' Eggs, and Desiderata of Michigan Birds of the Kent Scientific Institute, Grand Rapids, Mich. Svo. pp. 32.

Salvadori, Tommaso, Calalogo delle collezioni ornitologiche fatte presso Siboga in Sumatra e nell' isola Nias dal Signor Elio Modigliane e descritta da Tommaso Salvadori. (Ann. del Mus. Civ. di Stor. Nat. di Genova, Ser. 2, Vol. IV, May, 1887.)

Shufeldt, R. W. (1) Contributions to the Anatomy of *Geococcyx californianus*. (Proc. Zool. Soc. London, 1886, pp. 465-491, pll. xiii, xiv.) (2) Additional Notes upon the Anatomy of the Trochili, Caprimulgi and Cypselidæ. (Ibid., pp. 501-503.) (3) Bird Notes from New Mexico. (Forest and Stream, March 31, 1887.)

Wells, John Grant. Catalogue of the Birds of Grenada, West Indies, with observations thereon. Edited by George N. Lawrence. (Proc. U. S. Nat. Mus., 1886, pp. 609-633.)

Agassiz Companion, II, No. 4, April, 1887.

American Field, XXVII, Nos. 13-23, 1887.

American Naturalist, XXI, Feb.-May, 1887.

American Journ. Sci., XXXIII, April-June, 1887.

Anzeiger, Zoologischer, Nos. 246-251, 1887.

Audubon Magazine, I, Nos. 3-5, 1887.

Bird Call, I, Nos. 4-6, April-June, 1887.

Bulletin California Acad. Sci., II, No. 6, Jan., 1887.

Bulletin Ridgway Orn. Club, No. 2, 1887.

Canadian Record of Science, Vol. I, 1884-85; Vol. II, Nos. 1-7, 1886-87.

Forest and Stream, XXVIII, Nos. 9-19, 1887.

Hoosier Naturalist, II, Nos. 7-10, 1887.

Journal Cincinnati Soc. Nat. Hist., X, No. 1, April, 1887.

Naturalist, The. A Month. Journ. Nat. Hist. for the North of England, Nos. 141-143, April-June, 1887.

Ornis, II Jahr. 1886, 4 Hefte; III Jahr. 1887, 1 Hefte.

Ornithologist and Oölogist, XII, Nos. 4-6, 1887.

Ottawa Naturalist, I, Nos. 1, 2, April, May, 1887.

Proceedings U. S. Nat. Mus., 1886, pp. 621-714; 1887, pp. 1-96.

Publications of the Bristol County (Mass.) Orn. Club, No. 3, 1887.

Swiss Cross, I, April-June, 1887.

Transactions Ottawa Field Naturalists' Club, II, No. 3, 1887.

Zoologist, XI, Nos. 124-126, April-June, 1877.

GENERAL NOTES.

The Double-Crested Cormorant near Springfield, Mass.—A male Double-crested Cormorant (*Phalacrocorax dilophus*) was taken at Long meadow, four miles from here, May 6, 1887, in full breeding plumage. I have not known of one in this vicinity at this season of the year before, and only twice before in the autumn.—ROBERT O. MORRIS, *Springfield, Mass.*

The Florida Gallinule in Nova Scotia.—Mr. Watson Bishop, of Kentville, has in his collection a Florida Gallinule (*Gallinula galeata*) which was taken near the Cornwallis River, N. S., on September 20, 1886, by Mr. E. F. L. Jenner. Mr. J. M. Jones reports that three other examples of this species have been taken in that Province.—MONTAGUE CHAMBERLAIN, *St. John, N. B.*

The Middletown, Conn., Glossy Ibis of 1850.—In reference to the Middletown specimen noticed by Mr. Browne in his paper on the 'New England Glossy Ibises' (*Auk*, April, 1887), I would say that the original announcement by Dr. Barratt appeared in the Middletown, Conn., 'Sentinel and Witness' for Tuesday evening, May 21, 1850 (Vol. XXVIII. No. 1430), and is as follows :

“[For the Sentinel and Witness.]

“BLACK EGYPTIAN IBIS (A RARE BIRD).

“CALLED ALSO GLOSSY IBIS, *Ibis falcinella*.

“One of these rare birds, *Ibis falcinella*, was shot at Middletown, on the banks of the Connecticut, May 9th, time of a high flood. It is a male in full plumage. Its length is twenty-eight inches,* and stands eighteen inches high, bill five inches long, which is slender and curved. It has been carefully preserved, and is now in the cabinet of Dr. J. Barratt.

“By the papers we learn that a similar bird was shot at Freshpond, near Cambridge, Mass., on the 8th inst., and has been presented to the Harvard Cabinet of Natural History.

“It is highly probable that these birds belonged to the same flock, and may have been driven to the south by the late storms, after crossing Behring's straits — having left the valley of the Nile in March, as we suppose.

“The *Ibis falcinella* is very rarely seen in the United States. This is the first that has come to our notice on the Connecticut, and has not been known in this country many years.

“The Prince of Musignano was the first to show that the bird called *Tantalus Mexicanus* by Mr. Ord (the continuator of Wilson's Ornithology), was the *Ibis falcinella* of Europe, a bird common in Egypt.

“*NOTE.—Mr. Nuttall says length 23 inches,—that, I apprehend, is a typographical error for 28. Turton in Brit. Fauna, p. 55, says length 2 ft. 6; extent of wings, 3 ft. 2; weight, 18 ounces.”

“Mr. Nuttall in vol. 2, p. 89, of his highly interesting work on American Birds, has given a full history of this species of Ibis, with a figure shewing the Pyramids in the background. To this work we refer the reader (who has access to it). Mr. N. says, ‘it is a periodical visitor of Egypt, where, in common with the Sacred Ibis, it was revered and embalmed in the vast catacombs of Saccara and Memphis. It arrives in that country in October, and leaves it in the month of March. They spread themselves into Russia, Siberia, Tartary, Denmark, occasionally in Sweden, and perhaps Lapland, remaining in those countries until driven to migrate by the inclemency of approaching winter, at which period they appear to arrive in Africa and Asia. It is a still more rare and accidental visitor to the United States.’

“So highly was it honored, that the Ibis became the characteristic hieroglyphic of the country; repeated upon all their monuments, obelisks and national statutes. The abundance of their remains in the catacombs proves indeed the familiarity which the species had with the indulgent inhabitants of its favorite country. Diodorus Siculus says these birds advanced without fear into the midst of the cities. Strabo relates, they filled the streets and lanes of Alexandria to such a degree as to become troublesome and importunate. The Ibis is now no longer venerated in Egypt, and is commonly shot and ensnared for food. The markets of the sea coast are now abundantly supplied with them and a white species as game—both of which are ignominiously exposed for sale deprived of their heads, a spectacle from which the ancient Egyptians would have recoiled with horror.’

“The person who shot the Ibis at this place remarked, ‘how tame it was.’ This confidence and easy familiarity with man would render it entirely unfit for a residence in New England, where there is such a murderous propensity to shoot the feathered race.

“J. BARRATT.

“*Middletown, Ct., May 16, 1850.*”

The above account was reprinted in the ‘Fourth Annual Report of the Regents of the University on the Condition of the [New York] State Cabinet of Natural History for the year 1850’ (1851), pp. 113-115.

The Regents add: ‘A bird of the same species, shot by Mr. Hurst, on Grand Island, in the Niagara River, in August, 1844, is now in the State Cabinet. See Third Annual Report, p. 22.’

Dr. Barratt’s specimen is in good condition in the Museum at Wesleyan University, Middletown.—JNO. H. SAGE, *Portland, Conn.*

Geococcyx californianus—A Correction.—The writer published a memoir entitled ‘Contributions to the Anatomy of *Geococcyx Californianus*,’ which was read Nov. 16, 1886, and appeared in the ‘Proceedings’ of the Zoölogical Society of London on April 1, 1887. He finds that the figures of the muscles of the pelvic limb of the bird (pl. xlv and xlvi) are somewhat reduced, whereas in the ‘Explanation of Plates’ it states that these parts are figured “life size.” This error arose from the fact that the publishers

determined to include these figures on plates rather than give them life size, as originally intended, in the text, and they had to be reduced to do so. It was a very natural oversight to make on the part of the publishers, to print the author's corrected proof as returned to them, and the latter was not aware of the change. Such slips will occasionally occur, especially when author and publisher are separated by a distance of nearly 6000 miles, as in the present instance.—R. W. SHUFELDT, *Fort Wingate, N. M.*

Hummingbirds feeding their Young on Insects.—Mr. Manly Hardy has kindly consented to my publishing the following extract from one of his letters: "When I was in Colorado Mr. E. Carter told me this story. He found a Hummingbird's nest one afternoon, containing two eggs. As he wanted the parent he left it and returning next day shot her. To his surprise there were two young in the nest instead of eggs. Upon dissecting the young he found two insects in the stomach of one of them, thus proving that Hummingbirds sometimes feed their young on insects within twenty-four hours from the time they are hatched." Unfortunately Mr. Hardy did not ascertain the particular species of Hummer above referred to.—WILLIAM BREWSTER, *Cambridge, Mass.*

Otocoris alpestris praticola in Chester County, South Carolina.—Although noteworthy for its severity, the past winter was not favorable for the presence of Horned Larks in this portion of the Piedmont Belt. The rigorous weather of the early part of December, 1886, brought, however, a little company of less than a dozen, nine of which were taken. A study of Mr. Henshaw's descriptions (*Auk*, Vol. I, July, 1884) led to the conviction that these birds, which formed a continuous series, headed by a large and bright-colored male, were Prairie Horned Larks. Selecting a typical female and the extreme male, I forwarded them to Mr. Henshaw, who courteously examined the samples, determining them as follows: "I think you can safely call both specimens *Otocoris alpestris praticola*. The male is rather large, but it comes nearer to this race than to either of the others."

Whether *alpestris* and *praticola* will be found contemporaneously cannot be affirmed without further observation, but it is probable that both appear during some winters, though perhaps not during the same period of cold.—LEVERETT M. LOOMIS, *Chester, S. C.*

Clarke's Nutcracker (*Picicorvus columbianus*) in the Bristol Bay Region, Alaska.—The northward range of this species has been very much extended by the capture of a specimen at Nushagak, Alaska (lat. 66° N., long. about 159° W.), by Mr. J. W. Johnson, signal observer at that station. The specimen (No. 110,095, U. S. Nat. Mus. Coll.), an adult male, was obtained Nov. 5, 1885, and is apparently exactly like specimens from the Western United States.—ROBERT RIDGWAY, *Washington, D. C.*

Clarke's Nutcracker from the Kowak River, Alaska.—Since the above was written, the National Museum has received from Lieut. Geo. M. Stoney, U. S. N., an interesting collection of birds made in the valley of the Kowak or Putnam River, some 600 miles or more due north from the locality mentioned in the previous note, and among the species represented is an example of *Picicorvus columbianus* (No. 110,374, U. S. Nat. Mus.).—ROBERT RIDGWAY, *Washington, D. C.*

The Canada Jay in Southern Vermont in Summer.—While camping out last summer in Somerset, Vermont, I obtained a fine specimen of the Canada Jay (*Perisoreus canadensis*). The place was about 30 miles from the Massachusetts State line, in thick evergreen woods. It was on the morning of August 5, about 6 A. M., when I observed a pair of strange birds near the tent. I stepped back and got my gun, when the birds flew a short distance. I fired and brought down one of them, and on picking it up saw it was of this species. I have been unable to obtain the exact altitude of the place, but it was about 1500 feet. The latitude is about 43° north. Is not this very far south for this bird in summer?—HUBERT L. CLARK, *Amherst, Mass.*

Xanthocephalus xanthocephalus in Connecticut.—A bird which appears to be unquestionably of this species was shot out of a flock of *Agelaius phoeniceus*, on the open meadow opposite Hartford, late in July, 1884. From the plumage, I consider it to be a female. This makes, I believe, the third recorded occurrence of this species in New England.—WILLIAM E. TREAT, *East Hartford, Conn.*

Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*) in Maine.—Early in November, 1886, there was sent me for identification by Mr. Fred. Rackliff, of Spruce Head, Maine, a young female of this species, which Mr. Rackliff stated was shot by him on Metnic Isle, August 9, 1883.—ROBERT RIDGWAY, *Washington, D. C.*

The Baltimore Oriole (*Icterus galbula*) in Nova Scotia.—In September, 1886, I received from Mr. A. B. Sheraton, of Halifax, a young male of this species in the flesh. Mr. Sheraton wrote me that he had bought it from a countryman in the streets of Halifax, who reported having shot it within a few miles of that city. I cannot find any previous record of the occurrence of this Oriole in Nova Scotia, although it breeds regularly in the vicinity of Woodstock on the St. John River.—MONTAGUE CHAMBERLAIN, *St. John, N. B.*

Occurrence of the Evening Grosbeak (*Coccothraustes vespertina*) at Toronto, Canada.—On the afternoon of April 2, Dr. J. E. White, of this city, informed me that he had that morning discovered a flock of over thirty Evening Grosbeaks feeding near the northern boundary of the city. The announcement was very surprising, but all doubts were dispelled by

the production of a female specimen that he had secured. We went at once to the place, with a view to procuring additional specimens, but the flock had departed, and were no more seen. A resident of the neighborhood informed us that they had continued about this locality for over a week.

This is the fifth record of the species in Ontario.—ERNEST E. THOMPSON, *Toronto, Canada.*

Occurrence of the Evening Grosbeak in Fulton County, Kentucky.—Upon becoming certain that the Evening Grosbeak (*Coccothraustes vespertina*) really had been seen by me in this State I wrote to Mr. J. A. Allen to know if its occurrence was of any especial interest. He wrote that its occurrence anywhere south of the Great Lakes was rare, and might be considered almost as accidental, and that he knew of no record of its occurrence south of the Ohio River, and asked for my notes on the species in full for publication in 'The Auk.' They are as follows: March 18, 1887, Mr. Robert Powell showed me a female he had found dead. He said it was a 'Paroquet.' On March 22, I killed a female and saw another but could not secure it. The next day I saw several and killed a fine male. On the 25th I saw a flock of seven, but they were in the city limits and I could not shoot any. Up to date (March 29) these are all my notes on the species. If I see it again I will report further.—L. O. PINDAR, *Hickman, Ky.*

Winter Plumage of *Leucosticte australis*.—During the month of January, 1886, I was so fortunate as to secure several specimens of *Leucosticte australis* in full winter dress, and as no account of the winter plumage of this species has, I believe, ever appeared, the following may be of interest.

Leucosticte australis, adult ♂ in winter plumage (No. 1513, Coll. A. W. A.; January 24, 1886, Gold Hill, Boulder County, Colo.). Pileum grayish black, darkest anteriorly, slightly paling to grayish on occiput; lores dull blackish; nasal plumes white. General color above and below light umber-brown, tending to chocolate on the chin and throat. Feathers of the back with darker shaft-lines and paler edges; those of the breast but slightly tipped with whitish. Hinder parts of the body, above and below, rich carmine-red; primaries, outer four secondaries, second, third, fourth and fifth rectrices edged, and lesser wing-coverts broadly tipped with same color. Wings and tail blackish, all of the primaries and secondaries broadly, and median pair of rectrices slightly, edged with dull white. Lining of wings white, edged with rosy. Bill yellow, tipped with black for one-fourth its length. Feet black.

Adult ♀ (No. 1510, Coll. A. W. A.; Jan. 24, 1886, Gold Hill, Boulder Co., Colo.). General color as in the male, but paler. Light edgings of the feathers of the breast and back slightly more conspicuous; rosy markings paler and duller, primaries and first secondaries very slightly edged with rosy; wing-coverts and inner secondaries edged with buffy white;

lesser coverts tipped with the rosy of the abdomen, secondaries and tail-feathers slightly edged with hoary, linings of wings white, each feather slightly tipped with rosy. Bill yellow, tipped with black for one-quarter of its length.

Juv., sex? (No. 1515. Coll. A. W. A.; January 24, 1886, Gold Hill, Colo.). Crown dull grayish-black, feathers edged with gray, fading on the occiput into the grayish brown of the neck. Lores dusky; nasal plumes dull whitish. Sides of head and neck all around grayish brown, deepening to umber-brown on the chin and throat. Lower parts anteriorly light brown, each feather edged with whitish; abdomen dusky, the feathers tipped with pale pinkish and dingy white, feathers of the back dull brown, with darker shaft-lines and paler edges; upper tail-coverts and lesser wing-coverts with rosy markings; greater coverts edged with white, very slightly tinted with same. Wings and tail blackish, all of the feathers more or less edged with dull white. Lining of wings white. Bill yellow, clouded with black; feet and tarsus black. The entire plumage of this specimen has a very bleached, uncertain appearance.

In comparing the full plumaged *australis* with *L. tephrocotis*, both in winter dress, I find the latter much the darker bird, the umber-brown on the breast and back of the female *tephrocotis* being of about the same shade as that found on the male *australis*. In *tephrocotis* the rosy hue is less extended, decidedly duller, and more broken by the ground colors of the body. In *tephrocotis* I often find the rump marked with crescent-shaped rosy spots on a chocolate ground, while in *australis*, although the rosy patch is seldom, if ever, continuous, it is usually less broken and extends farther forward. A few of the males of *australis* had the carmine of the abdomen clear and unbroken, extending in the middle much farther forward than in *tephrocotis*, which, in all cases examined, had the colored patch more or less broken by chocolate-brown.—A. W. ANTHONY, *Denver, Colorado.*

Note on *Spizella monticola ochracea* Brewst.—In his 'Additions to the Catalogue of the Birds of Kansas', Col. Goss suggests that, since all the specimens of this form examined by him had been "captured in the fall or early winter, further examination, especially of the birds in their spring plumage, might prove the paler form to be the immature winter dress" of the common species (true *S. monticola*), although he remarks that "Mr. Brewster, in making his examination, had before him not only his large collection, but that in the National Museum, which must have embraced specimens taken at different seasons of the year." For Col. Goss's information on this point, as well as for that of others who may not be familiar with the two forms in their various plumages, I would state that the National Museum collection embraces large series of both taken on their breeding grounds, *S. monticola* in northern Labrador (Ft. Chimo, Ungava, by L. M. Turner) and *S. monticola ochracea* in Alaska (various localities by various collectors), and that the two forms are in summer dress quite as distinct from one another as in winter, the young in first plumage being equally different. Moreover, the difference is perfectly

constant so far as birds from the two regions are concerned, the comparatively very small number of specimens of intermediate character coming of course from neutral territory.—ROBERT RIDGWAY, *Washington, D. C.*

Spizella pusilla wintering near Hartford, Conn.—This species seems to have some inclination to winter in this vicinity, as will be seen from the following data: While collecting Jan. 11, 1886, I saw four, three of which I shot for positive identification. Jan. 26, of this same year, I saw another which was in company with a flock of *Spizella monticola*. I could not find them again during the winter of this year. On Jan. 20, 1887, noticing a small Sparrow hopping around the door-yard I soon approached it, and found it very tame, and noticed that it was a typical *Spizella pusilla*. This bird remained around here, during a very 'cold snap,' until Jan. 26, after which it suddenly disappeared. From these facts, I think their stay here must have been voluntary, for the coldest weather failed to drive them away, and there were several seen at different times, which proves clearly enough that they were not all disabled birds.—WILLARD E. TREAT, *East Hartford, Conn.*

Change of Winter Habitat in the Grass Finch.—I take the following entries from my note book: "January 2, 1885. Shot four males from a flock of twelve *Pooecetes gramineus confinis*, the first I ever saw here in winter. They seemed to want to feed in one spot of stubble and would return to it after being fired at.—Jan. 5. Saw Grass Finches.—Jan. 8. Saw same flock of Grass Finches.—Jan. 12. I saw a flock of one dozen Grass Finches at the school house.—Jan. 13. I saw two dozen Grass Finches at the school house; think they came from the south; also Savanna Sparrows, and a flock of Waxwings. Mercury 30° F.—Jan. 16. Cold high wind all night. Temperature about zero. I saw three Grass Finches and a Song Sparrow.—Jan. 17. Mercury 9° (above). The Grass Finches are still feeding at the stock corral; not more than half a dozen seen at one time.—Jan. 22. Mercury 32°; wind E. S. E.; rain and sleet. In a two mile walk I saw a large flock of Grass Finches. In comparing ten skins eight of the skins are exactly intermediate between the typical *gramineus* and the var. *confinis*. One is typical *gramineus*, shot here (Cook Co., Tex.) March 12, 1880. One is var. *confinis*, shot at Colorado, Tex., May 18, 1882.—Feb. 2. I shot and compared three Grass Finches; they seem to constantly stand between the type and the variety; the bill of the western bird may be a little longer and the ear-coverts whiter or grayer. Size in inches:

♂	Length,	6.30	Wing,	3.10	Tail,	2.60
	"	6.25	"	3.00	"	2.35
♂	"	6.00	"	2.90	"	2.50."

From the above it may be seen that the birds persisted in staying through January, and my notes show that they were seen at intervals until March 12, when they were heard singing.

On Nov. 17, 1885, the bulk passed south, and on Dec. 10 the mercury fell to 15° below freezing. This was the coldest weather until Jan. 7, 1886. On Jan. 6, 1886, a flock of fifteen were seen, and were repeatedly seen up to Jan. 20. Where those birds came from and why they came at such an unseasonable time of the year is the question. It will be seen that they passed south in November, 1885. It will be further noted that there was only four days difference in the time of arrival in January, 1885, and that of 1886. For three weeks prior to their arrival in 1885 it was very cold for this climate. For three weeks prior to their arrival in 1886 the temperature was moderate. During January, 1886, they endured weather 4° below zero.

If winds are to be considered as affecting the flight of birds, these Finches must have come from the N. W., as it had blown from that quarter for five successive days, and one day it blew with great violence all day. They were just ahead of the 'blizzard' of Jan. 7, which was also from N. W. But why should they come in advance of the cold in 1886, and through it in 1885? Mr. Nehrling (Bull. N. O. C. Vol. VII, p. 12) says: "Grass Finch. Only found during migrations. None remain, so far as I know, to winter or to breed." His observations were made near Houston, Tex. Mr. Geo. B. Sennett's 'Notes on the Ornithology of the Lower Rio Grande of Texas,' page 17, says: "*Poocetes gramineus confinis* (Gm.) Bd. Western Grass Finch. ♂ Apr. 9th, Brownsville. ♀ Apr. 29th, Hidalgo." Dr. J. C. Merrill's 'Notes on the Ornithology of Southern Texas' (Ft. Brown), page 126, says: "*Poocetes gramineus* var. *confinis* Baird. Spring and Autumn."

It is probable from the longitude of the localities in which the above observations were made that a large per cent. of the Grass Finches are of the intermediate form.

It is worthy of note that Grass Finches were wintering south of the Rio Grande in 1876, and on the northern border of Texas in 1886.—GEORGE H. RAGSDALE, *Gainsville, Cook Co., Tex.*

A Song Sparrow wintering in Eastern Maine.—During the winter of 1885-86 I received a Song Sparrow (*Melospiza fasciata*) from a friend, who secured it on January 23, 1886. The bird found abundant food during its winter sojourn in the chaff and other refuse from a large barn, in the immediate vicinity of which was a protected covert that afforded it ample shelter. On dissection it proved to be a male in good condition. Considering the date and locality, it may fairly be said to have been wintering.—LEWIS M. TODD, *Calais, Me.*

The Song Sparrow in New Brunswick in Winter.—I have seen the Song Sparrow occasionally in New Brunswick during the winter months, and Mr. Francis Bain says a few regularly remain on Prince Edward's Island all winter.—MONTAGUE CHAMBERLAIN, *St. John, N. B.*

Unusual Nesting-Site of the Song Sparrow.—Mr. Wilbur F. Lamb, of Holyoke, Mass., writes me under date of May 30, 1887, as follows: "I

send you in same mail with this bird which was captured on her nest in a hole in a willow tree. The hole was made by the decay of a limb, was about five and a half feet from the ground, and large enough to admit the hand of an adult easily. It was about ten inches in horizontal depth. There was almost no nest—simply a depression scratched in the decayed wood, with half a dozen short strips of grape-vine bark arranged circularly in it. The whole cavity was wet and soggy. . . . The bird was sitting on five eggs when captured.” On examination the bird proved to be a female Song Sparrow (*Melospiza fasciata*), showing marks of incubation.—J. A. ALLEN, *American Museum of Natural History, New York City*.

The Sharp-tailed Sparrow (*Ammodramus caudacutus*) in a Fresh-Water Marsh.—I am informed by my friend, Mr. Lewis M. Todd, of Calais, Me., that during the autumn of 1886 he captured one of these Sharp-tails on a marsh some distance above the falls on the St. Croix River. The water at that point must be free from saline flavor, as the falls prevent the sea water from reaching it.—MONTAGUE CHAMBERLAIN, *St. John, N. B.*

Nesting of the Hudsonian Chickadee (*Parus hudsonicus*).—I find that this species, when excavating for its nest, sometimes enters from the side of a tree, and not invariably from the top of a stump, as I have stated elsewhere. My co-laborer in this district, Mr. James W. Banks, during the seasons of 1885 and 1886, discovered three nests of which the entrance was at the side of a decayed stub. One of these, now before me, is a rather interesting example. It lays in the section of the tree (a poplar) just where it was placed by the birds. The tree measures four inches in diameter, and the nest fills all the space excepting the little that is taken up by the outer bark, and on one side by a slight margin of the decayed wood. The nest is about two inches deep, and is set on a cushion of dried moss. Beside the felted fur used in the construction of the nest, there is considerable dry moss mixed through, a material I have never before seen in the nests of this species.

The entrance was about six inches from the top of the nest. After piercing the outside shell of bark the excavation turned downward, and was carried obliquely some four inches, where it was abruptly widened from two to four inches. This width was continued to the bottom.—MONTAGUE CHAMBERLAIN, *St. John, N. B.*

Another Addition to the Avi-fauna of South Carolina.—May 6, 1887, I shot a specimen of *Turdus alicie bicknelli* in the thick undergrowth of a large body of timber near the town of Chester. In the same locality I have found *alicie*, in varying numbers, in former years. Some of the examples of this form have approached closely to the maximum dimensions of the lesser race, still none could be properly assigned to it. The following are the measurement of the bird above noted: ♂ Length, 176.53 mm.; extent, 274.32 mm.; wing, 86-36 mm.; tail, 72.39 mm.; culmen, 12.7; tarsus, 24.2 mm.; middle toe, 16 mm.—LEVERETT M. LOOMIS, *Chester, S. C.*

Another Specimen of Bachman's Warbler (*Helminthophila bachmani*).—It is with peculiar pleasure that I am enabled to supplement Mr. Lawrence's recent account of the capture of Bachman's Warbler in Louisiana,* by the record of a specimen from Florida. Mr. M. E. Spencer, keeper of the lighthouse at Sombrero Key, off Southern Florida, whose name will be long remembered in connection with the re-discovery of Swainson's Warbler,† has recently sent me the head and wings of a Bachman's Warbler which struck his light tower on the night of March 21, 1887. Mr. Ridgway has kindly compared this specimen with Audubon's type in the National Museum, and pronounces it to be an adult female.

This record is of unusual interest, not alone because it adds a bird to the fauna of Florida, but because it is the second positive record of the capture of Bachman's Warbler anywhere in the United States for more than half a century.

The only specimens of Bachman's Warbler at present known to have been taken in the United States are the following:

Two skins, male and female, belonging to the U. S. National Museum, collected at Charleston, South Carolina, by Dr. John Bachman. The female was taken in July, 1833, and the male is supposed to have been shot at about the same time. These specimens are the types of Audubon's description and plate.

A skin, male, in the collection of Mr. George N. Lawrence, collected at or near Lake Pontchartrain, La., by Charles S. Galbraith, in the spring of 1886.

A mounted specimen, female, belonging to the old Lafresnaye collection, now in the Museum of the Boston Society of Natural History; locality, date of capture, and name of collector unknown. This is the subject of Mr. Brewster's recent article in 'The Auk' (Vol. IV, No. 2, 1887, p. 165). Mr. Ridgway informs me that Mr. Brewster was wrong in supposing this specimen to be the female figured by Audubon, as that specimen belongs to the National Museum. But since Audubon states that several specimens were secured by Dr. Bachman, it is not impossible that one of them may have found its way into the Lafresnaye collection.—C. HART MERRIAM, *Washington, D. C.*

Additional Specimens of Bachman's and Swainson's Warblers, obtained by Mr. Chas. S. Galbraith, in the Spring of 1887.—Mr. Galbraith returned in May from Louisiana, where he had been collecting birds during the spring, at the same locality on Lake Pontchartrain where he obtained the specimen of Bachman's Warbler last year. He was requested to pay special attention to procuring Bachman's and Swainson's Warblers. ✓ Of the former (*Helminthophila bachmani*) he procured six specimens, two each of adult males and females and two immature females.

* Auk, Vol. IV, No. 1, Jan. 1887, pp. 35-37.

† Auk, Vol. II, No. 1, Jan. 1885, pp. 62 and 104.

The adult males have the under plumage of a brighter yellow than that of the one obtained last year; the color, however, is of a rather light shade, not the deep yellow represented in Audubon's plates; the dark markings on the crown and upper breast are similar to the one procured last year.

The upper plumage of the adult female closely resembles that of the male, except that there is no indication of black on the crown, and on the front there is only a dull yellowish tinge; the under plumage is of a lighter yellow than in the male, with a dusky, grayish patch on the lower part of the neck, without any appearance of black as given in Mr. Audubon's plate, though in his description he says "fore-neck dusky."

The young female is quite like the adult in its upper plumage, but has the under plumage grayish, with just a tinge of yellow.

Both sexes of the adult are of the same dimensions: length, 4.50 inches; wing, 2.37; tail, 2; bill, .44; tarsus, .70. The young measure a little smaller.

In the color of its upper plumage (excepting the crown) this species closely resembles the Tennessee Warbler, and the young does somewhat in the under plumage, but they are easily distinguished by the whitish stripe over the eye and the dusky line from the bill to the eye in the Tennessee Warbler.

I requested Mr. Galbraith to note any peculiarity of habits, but he secured none of the specimens himself, all being killed by his assistants; to one of the males is attached a label with the following account: "Killed March 29, 1887; testes large. Killed on the upland; seen to fly from the ground to a small tree."

He procured but nine specimens of Swainson's Warbler (*Ictinia swainsoni*), which seems remarkable, as he collected so many more last year when not specially looking for them. They are probably local in their habits, and the colony was reduced by the number obtained last year.—GEORGE N. LAWRENCE, *New York City*.

[It may be of interest to add that three of the six specimens of Bachman's Warbler, mentioned above as obtained this year by Mr. Galbraith, are now in the collection of Mr. William Brewster, and that the other three, and also the specimen obtained by Mr. Galbraith in 1886, are in the collection of the American Museum of Natural History, New York City. This increases the number of specimens taken in the United States to *eleven*. Several specimens, as is well known, have been taken in Cuba.—J. A. A.]

Birds laying their Eggs in the Nests of other Birds.—In 'The Auk' for January, Mr. H. B. Bailey, of South Orange, N. J., reports the finding of eggs of the Brown Thrush in the nest of the Wood Thrush. I have the eggs of *Coccyzus americanus* and *C. erythrophthalmus* taken from the same nest, two of the former and one of the latter. I think the nest was of *americanus*, but I could not distinguish which bird was on the nest at the time I found it.

I also found a nest of *Merula migratoria*, taken possession of by *Coccyzus americanus* before it was finished, which was filled nearly full of root-lets; and in this condition the Robin laid one egg and the Cuckoo laid two and commenced incubation, when a Mourning Dove (*Zenaidura macroura*) also occupied it and laid two eggs and commenced incubation with the Cuckoo. I found both birds on the nest at the same time, when I secured nest and eggs. The eggs of the Robin and Cuckoo were slightly incubated; those of the Mourning Dove were fresh. The above was published in the 'Forest and Stream,' Aug. 24, 1882, p. 65.

I also have a nest of *Sayornis phabe* in which a Robin's egg is nearly embedded, and another of this same species with a Cowbird's egg quite covered. The latter is often found in the nests of small birds, but I have found them covered up, except in this instance, only by the Goldfinch and Summer Warbler.—J. L. DAVISON, *Lockport, N. Y.*

New Species of Winter Birds in New Brunswick.—On January 4 of the present year a Flicker (*Colaptes auratus*) was taken near St. John, N. B., and the following day a Night Heron (*Nycticorax nycticorax naevius*) was captured. Five days later a Sharp-shinned Hawk (*Accipiter velox*) was shot while lurking around a barnyard.—MONTAGUE CHAMBERLAIN, *St. John, N. B.*

Additions to Mr. Drew's List of the Birds of Colorado.—Mr. Frank M. Drew in 'The Auk' for January, 1885, gives a list he believes complete of Colorado birds. I have observed here five years and can add to his list the following: viz.

Merganser serrator. Rather rare.

Chen hyperborea. Common.

Branta bernicla. Rare.

Grus canadensis. Not common.

Micropalma himantopus. Common.

Numenius hudsonicus. About fifty seen April 30, 1885. No others observed.

Asio accipitrinus. Common.

Colaptes auratus. But one seen.

Contopus pertinax. But one specimen.

Scolecophagus carolinus. Common. Not identified until this year. Found in flocks with *S. cyanocephalus*.

Spizella socialis. Abundant in spring. The bulk make a short stay. Not found breeding, though I suspect a few do breed. I am confident that this is not *S. s. arizonæ*.

Melospiza georgiana. About eighty seen in May, 1885. More in other years.

Pipilo maculatus arcticus. Common. Some years all seen are *T. m. megalonyx*.

Vireo olivaceus. Tolerably common.

Vireo bellii. Tolerably common.

Anthus spragueii. Four seen.

Thryothorus ludovicianus. One seen.

Thryothorus bewickii. One seen.

Turdus fuscescens. One seen.

Turdus aonalaschkæ pallasi. Not common.

This is a prairie country and many of the birds named in Mr. Drew's list are not found here.—P. M. THORNE, CAPT. 22d INF'TY, U. S. A., *Fort Lyon, Col.*

CORRESPONDENCE.

[*Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.*]

Individual Variation in the Skeletons of Birds, and other matters.

TO THE EDITORS OF THE AUK:—

Dear Sirs:—Before saying anything about the individual variation in the skeletons of birds, allow me to pass a few remarks upon the letters of Dr. Stejneger and Mr. Lucas, which appeared in the last issue of 'The Auk' (April, 1887), and wherein I am called upon to hold up my hands for a number of sins. Dr. Stejneger is quite correct in calling me to account for saying that 'such forms as *Picus*' were birds with a 'two-notched' sternum; all Woodpeckers have *four* notches in their sternums, as we well know, and I must be pardoned for making such a *lapsus calami* or *lapsus memoriæ*, whichever it was. When Dr. Stejneger asks the question, however, with respect to the Swifts and Hummingbirds, and says, "What in the nature of these birds' flight has brought about such an extraordinary similarity, osteologically, myologically, and pterylographically in the wing-structure of the Swifts and Hummingbirds, as compared with that of the Swallows?"—it's another matter. And so far as the *osteology* of the wing-structure of a Swift and a Hummingbird is concerned and their "extraordinary similarity," I would simply invite Dr. Stejneger's attention to a short paper of mine in a recent issue (the April number, 1887, I believe) of the 'Proceedings' of the Zoölogical Society of London, wherein I have figured the *humerus* for a Swallow, Swift and a Hummingbird, and ask him where the "extraordinary similarity" comes in, in *that* part of the wing-structure of the last two forms mentioned?

As to the other extraordinary similarities I will dwell upon them in another connection, later.

Mr. Lucas's letter requires no special notice, for I must still plead *not guilty* to the charge of having published an "imperfect" drawing of the base of the skull of *Tachycineta thalassina*, and that is the sole point of

issue in his communication worthy of consideration. To those who saw Mr. Lucas's reproduction of the handsome woodcut the P. Z. S. gave me of my drawing of the structure in question, nothing need be said. But to those who have not yet had that pleasure permit me to say a word in my own defence. It will be remembered by those who have read this discussion, that Mr. Lucas claimed that my figure, just referred to is "imperfect" from the fact that the *maxillo-palatines are broken off*. My figure appeared in the P. Z. S. for 1885 (Dec. 1, p. 899, fig F.), and Mr. Lucas's purported copy of it appeared in 'Science' (No. 223, p. 461, fig. 1), some time after my original memoir appeared.

Now it was my intention, at first, to present here photographic copies of my drawing and Mr. Lucas's copy of it, in order to show, what I am afraid I must say, the unfair manner in which he has acted in the premises in order to support his views.

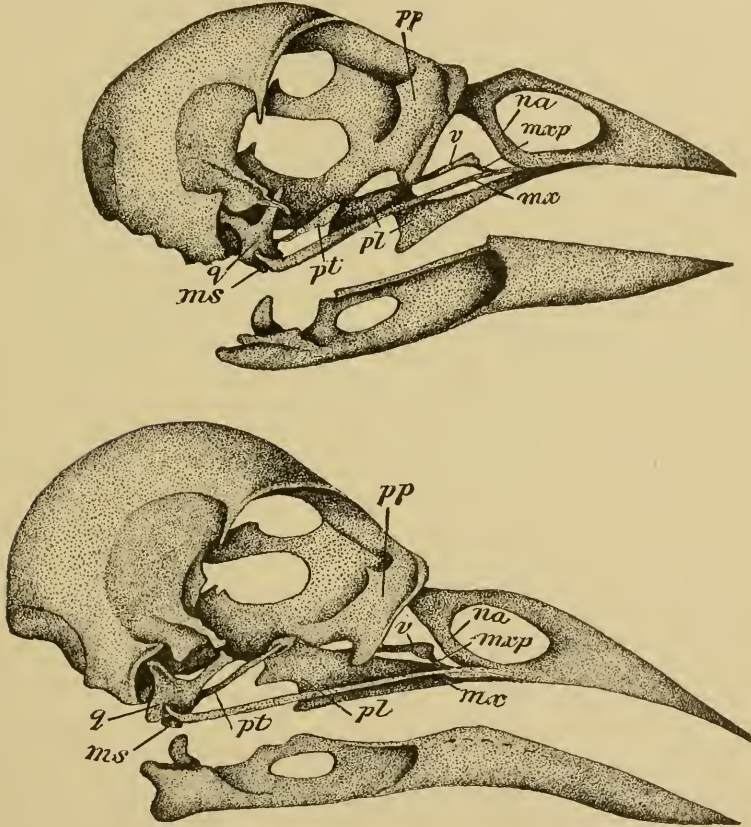
But space in 'The Auk' is far too valuable in my estimation to further argue the point,—and I will only say that in the copy (?) which Mr. Lucas made and published of my drawing the *backward-turned ends* of the maxillo-palatines have been *removed*, which ends are shown in my original drawing, small though they be. With this brief remark I close my case, and it will not be resumed by me under any circumstances; no one welcomes honest criticism more heartily than the writer,—but is that honest criticism?

Speaking now of the individual variation in the skeletons of birds I would like to reproduce here, in illustration of it, a pair of skulls which figured in an article of mine in 'Science' not long ago. As many readers of the 'The Auk,' both at home and abroad, possibly may not subscribe for that estimable journal, I was led to believe that in bringing these drawings more directly before ornithologists, many of them could not fail to find something of interest in them.

These each represent a skull ($\times 2$) of the Yellow-headed Blackbird (*A. xanthocephalus*), the specimens having been collected by myself, and are now in my possession. We are very well aware that throughout animate nature, all specific forms vary more or less, and that the corresponding structures of any two species are never quite alike, either in form or size. So far as birds are concerned, I think it would be hard to find a pair of skulls, that would better show, taking this part of their organization into consideration, how great this variation may be sometimes. It is very evident that an *exact* description of one of these skulls would not answer for the other, notwithstanding that they are both from birds of the *same species*,—yet a *general* description could be written that would fully cover all their salient features, and sufficiently differentiate them from descriptions of the skulls of other birds.

With respect to *measurements* and exact descriptions, however, for any structure, for any particular species of bird, we are in the same quandary in our accounts of such structures among the lower vertebrates as the anthropotomists are with respect to descriptive human anatomy. Much might be written about these two skulls here figured which lack of space forbids, but this will not debar the thoughtful ornithotomist from making

a careful study of them for himself. One thing it must point out to all, and that is, for our descriptions of such structures to be broad and full we should have before us, whenever it is possible, *abundance of material*,—and, too, with respect to measurements, we should aim to establish reliable *standards* through the calculation of averages computed from carefully taken individual data.*



RIGHT LATERAL VIEW OF THE SKULLS OF *X. XANTHOCEPHALUS*,
♂♂, (X2).

pp, pars plana; *na*, nasal; *mxp*, maxillo-palatine; *v*, vomer; *mx*, maxillary; *pt*, palatine; *pt*, pterygoid; *ms*, manibular sesamoid; *q*, quadrate.

* Since publishing the above in 'Science,' Mons. Alfred Grandidier, Memb. de l'Institut de Paris, writes me from Paris that he fully agrees with me in the marked variation that may take place in the skulls of the same species of birds, and invites my attention to figures 1-1d of plate 156a of his 'Birds of Madagascar'; and to figures 2 and 4 of plate 18 of his 'Mammalia of Madagascar.' I regret to say that this well-known work is not before me at the present time.

At the first meeting of the A. O. U. Committee on the Classification and Nomenclature of North American Birds I was honored by having the request made of me by the Committee to make a report upon the entire structure of *Chamaea fasciata* with the view of throwing, if possible, some light on its position in the system, and although that is several years ago, all my continued efforts failed in securing the necessary material to the carrying out of such a task. Recently, however, through the great generosity of Mr. G. Frean Morcom, of Chicago, and the timely assistance of Mr. F. Stephens, of San Bernardino, Cal., thanks to both, I can now report that I have in my possession for the aforesaid piece of work, an exceptionally fine series of alcoholic specimens of the *Chamaea fasciata*. During the years of waiting I have not been idle myself, and I have alcoholics of many desirable forms to compare with our subject, but still many are among my desiderata and will be acknowledged with gratitude, as well as duly so in the Memoir, if sent to me. Such a bird as *Accentor modularis** would come into play, perhaps, or some of the Old World forms of the Timeliidae; any species of the genus *Lophophanes* will be acceptable, and Wrens and Tits generally. Just as soon as other unfinished work will permit me, I will now put forth my best endeavor to render a full account of the structure of this interesting species, and that will fall within the year, — the powers permitting.

Very respectfully and faithfully yours,

R. W. SHUFELDT.

Fort Wingate, N. Mexico. May 21, 1887.

'Scarcity of Adult Birds in Autumn.'

TO THE EDITORS OF THE AUK:—

Sirs: In a late (January) number of 'The Auk' Mr. Beckham asks for an explanation of the fact that out of three hundred and sixty-seven birds collected by him in Colorado and Kentucky between Sept. 1 and Nov. 22, 1886, three hundred and forty-eight were birds of the year, leaving only nineteen adults, of which eleven "were species resident where collected." The question thus raised was anticipated and answered in my recent paper on Bird Migration † by the following:

"IV. That with most North American birds the majority of adults either precede or accompany the first flights of young in the autumnal migration I am convinced by a long field experience, during which, moreover, I have failed to find any proof that the young of a single species precede the old. My evidence in support of this statement is of two kinds: (1) Observations made on the departure of birds from their breeding stations. (2) Observations on flights arriving from localities north of the stations of observations. The first class of evidence, in my opin-

* Professor Alfred Newton, F. R. S., writes me from Cambridge University that he has had collected for me a full series of this bird, for which my most sincere thanks are gratefully tendered.

† Mem. Nutt. Orn. Club, No. I, March, 1886, pp. 15-16.

ion, is much the more reliable, for reasons which will be given presently. It includes a long array of notes, from which I select and condense the following:—

“At all points where I have collected regularly and systematically through July, August and September I have found that the adults of most of the smaller land birds which migrate before October, and especially of those which migrate by night, begin to disappear as soon as the young become able to shift for themselves. Their departure is usually gradual, and often scarcely perceptible from day to day; but before there is any appreciable diminution in the number of young the adults have become so scarce that they commonly represent less than five, and often not more than one per cent. of the total number of individuals of their respective species present. As a rule they disappear as soon as, and often before, they have completed their summer moult, whereas the young usually linger for some time after their autumnal plumage is perfected. Every New England collector who has paid especial attention to obtaining adult birds in full autumnal dress will testify to the truth of this statement. With the Warblers there is often the greatest difficulty in securing such representatives of even the commonest species.

“My experience with species which come from further north is that the first flights are composed largely, and often entirely, of old birds. The reason why this fact has been overlooked, or even positively denied by so many observers, becomes apparent when we consider the dates at which even the earlier autumnal migrants are said to reach Massachusetts from the north.

“Almost without exception the time is fixed somewhere in September, and I venture to say that the majority of the New England collectors still believe that September 1 marks about the beginning of the autumnal migrations. This impression has resulted from the fact that our collectors are usually absent at the mountains or seashore during August. Even if obliged to pass the dog-days nearer home, they rarely think of taking the field at a time when it is supposed that there is nothing of value to be had there. The weather is hot and enervating, the foliage is at its densest, birds are silent and hard to find, and most of them in such ragged plumage that they are worthless as specimens.”

“Now the simple truth is that the migrations of the most of our small birds begin early in August. During the last two weeks of that month there are usually several real ‘rushes,’ when the woods throughout Eastern Massachusetts are filled with such northern species as *Turdus swainsoni*, *Sitta canadensis*, *Dendroica coronata*, *D. maculosa*, *D. blackburniae*, *D. castanea*, *Sylvania pusilla*, *S. canadensis*, *Seiurus noveboracensis*, *Empidonax flaviventris*, etc.”

It is gratifying to have so much of the above corroborated by Mr. Beckham’s experience. Perhaps other contributors to ‘The Auk’ may be able to add something on this interesting and important subject.

WILLIAM BREWSTER.

Cambridge, Mass.

The 'Proceedings' of the U. S. National Museum.

TO THE EDITORS OF THE AUK:—

Sirs:—In the last number of 'The Auk' you charge the 'Proceedings' of the U. S. National Museum with being *antedated*. Allow me to correct the presumption that the date at the bottom of the first page of each signature is "the date of its issuance from the Government Printing Office." The date in question is simply the date of stereotyping the plates, as it very often happens that these are not printed off immediately after casting. In order to avoid confusion in the future, it has been decided, however, to omit the date of stereotyping, and each sheet distributed separately will be stamped with the exact date of publication. In the volume of 'Proceedings' for 1886, there will be found a list of the dates of issuance of each signature, and it is intended to have a similar list accompany each volume in the future.

Yours, very truly,

LEONHARD STEJNEGER.

Smithsonian Institution,

June 9, 1887.

We are glad to learn that the signatures of the 'Proceedings' will in future be stamped with the "date of publication," when sent out separately. The list of dates of issuance of the signatures of the volume for 1886 has come to hand, and will be of permanent value. The "date of stereotyping" certainly had the appearance of being the date of publication, and with nothing to indicate the contrary, would naturally be so taken, and, to our knowledge, has been so understood.—EDD.]

NOTES AND NEWS.

THE American Museum of Natural History, of New York City, has recently received several important additions to the Department of Ornithology. One of the most important of these is the acquisition of Mr. D. G. Elliot's almost unrivalled collection of Hummingbirds, numbering over 400 species, represented by about 2000 specimens, and including some fifty or more types. Its importance is further enhanced from its having formed the basis of Mr. Elliot's recent monograph of the family. It doubtless ranks as second in the world in point of completeness, or next to that of the British Museum. This collection is a gift from Mr. Elliot, whose unfaltering interest in the Museum has been manifested on many occasions, by valuable donations and important services.

Another invaluable accession is the addition, by purchase, of Mr. George N. Lawrence's collection of American birds, numbering about 3000

species and including some 300 types. This collection is the gathering of a lifetime by a veteran ornithologist, and consists largely of specimens identified by the highest authorities, much of the material having passed through the hands of specialists. The collection contains not only a nearly full series of North American birds, including many specimens of historic interest, but also about two-thirds of all the known species of Mexico, the West Indies, Central America, and South America. It includes the types of nearly all the many species described by Mr. Lawrence, and as a reference collection will prove of the highest value. The Museum is especially to be congratulated on securing a collection of such rare scientific importance.

A further important addition consists of a collection of 4000 bird skins, about 150 clutches of well-identified eggs (generally with the nests), and several hundred bird sterna, from the Province of Matto Grosso, Brazil, purchased of Mr. Herbert H. Smith (see Auk, IV, p. 84). This collection numbers about 300 species, including many of special interest, and doubtless, when fully worked up, will yield some novelties. In many instances the suites show the changes of plumage from the nestling bird to maturity.

While these three collections add vastly to the scientific resources of the ornithological department of the Museum, a very noteworthy addition has been made to the exhibition series of birds, consisting of eighteen very elaborate 'Group Pieces.' These are arranged in twelve cases placed in the alcoves of the 'Bird Floor', and illustrate in a striking manner the nesting habits of the species represented. Each group consists of a pair of birds, with their nest and eggs, surrounded by their original accessories, varying, according to the species, from a bit of salt marsh, pasture, or a woodland bank, to a full-blown apple bough or cherry sapling. In case of the bush- or tree-nesting species, the nest has been left *in situ*, the foliage and the blossoms of the bush or branch being reproduced in *fac simile* from nature; in the ground-nesting species the nest has been taken, with a square yard of the sod on which it rested, to the Museum, the grass and other plants growing thereon remaining intact, and the perishable parts faithfully reproduced in detail exactly as in life, thus giving results eminently realistic. The modelling of the plants has been done by Mrs. E. S. Mogridge, aided by her brother Mr. Mintern, both formerly of the South Kensington Museum of England, the celebrated bird groups of that institution being also the work of their skilful hands. The careful and laborious gathering of the material, the designing of the groups as to special effect in each case, and the general ground-work, is the work of Mr. Jenness Richardson, who has displayed excellent taste and skill in his share of the details.

To Morris K. Jesup, Esq., President of the American Museum, is due the idea of reproducing here groups similar to those of the South Kensington Museum, while the Museum is indebted to the generosity of Mrs. Robert E. Stuart for the means to carry it into effect. Through her liberality the work will be continued, and some twenty or more groups added the present year. The unrestricted means available for the work permits the attainment of finer results than have ever before been attempted, and

which, so far as this country is concerned, are unique. To the general public these 'Bird Groups' are eminently attractive and instructive.

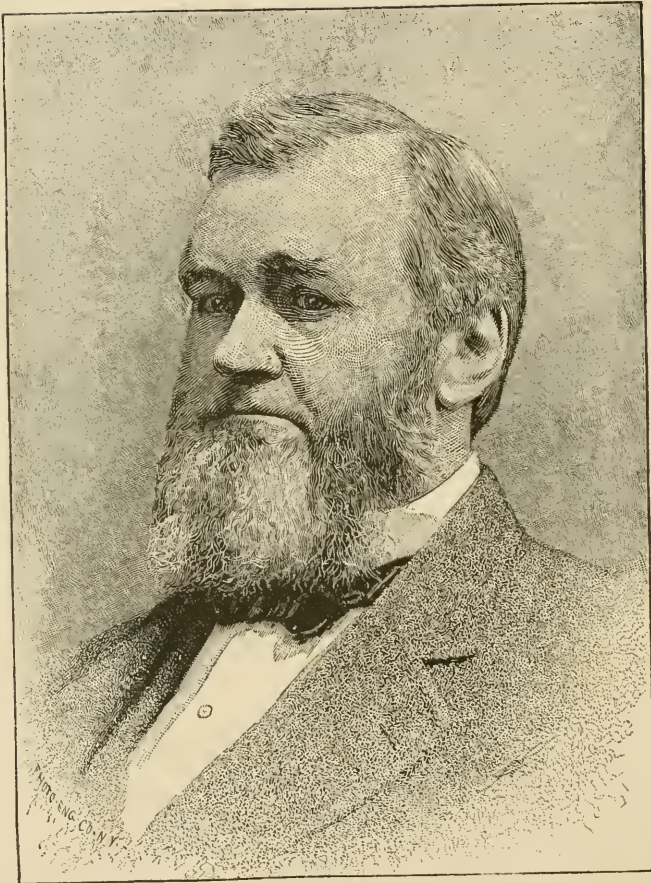
The efficiency of the Department of Ornithology has recently been further greatly enhanced by the purchase of Mr. D. G. Elliot's ornithological library, consisting of about 1000 volumes, selected with great care as to their utility, and embracing many of exceptional rarity. Its purchase goes far toward placing the library of the American Museum in the front rank of American libraries as regards works relating to ornithology. The Elliot library is a gift to the Museum from two of its trustees, Mr. Cornelius Vanderbilt and Mr. Percy R. Pyne.

In the April number of 'The Auk,' it was stated that the unrivalled collection of Ohio birds formed by the late Dr. J. M. Wheaton, had been placed in the State University. We have since been authoritatively informed that this statement is incorrect. Our informant writes: "The Doctor's collection of bird skins is not now and never has been at the Ohio State University, but is, as it always has been, in the Doctor's house. It was his intention to place them in trust in one of the City Parks—the 'Franklin'—on condition that a suitable place be constructed to display them and take proper care of them. With the usual shortsightedness, the great probability is that no provision will be made for this trust, and that this invaluable collection will be allowed to go from Columbus. There are about a thousand specimens, representing all of the Ohio fauna, together with many foreign species. As every ornithologist knows, this collection can never be duplicated."

THE 'Transactions' of the Ottawa Field Naturalists' Club are now issued monthly under the title 'The Ottawa Naturalist,' the first number of which bears date April, 1887. Besides the usual papers, reports, and record of proceedings, it will contain "an account of each general meeting, soiree, class, excursion, sub-excursion, or other undertaking of the Club."

It is announced that 'The Ornithologist and Oölogist,' beginning with the July issue, "will pass into the possession of the Bristol Ornithological Club," of which it will be "the official publication." Mr. Frank B. Webster, 409 Washington St., Boston, will remain its publisher.

FROM a private letter of an ornithologist, recently in Florida, we select the following suggestive reference to the destruction of Herons in Florida: "Plume hunters have destroyed about all the Florida 'Rookeries.' I saw one whole wagon load of the scapular plumes of *Ardea wardi*, at one point. It is a burning shame, and it would make your heart ache to hear the wails of the starving young birds whose parents have been killed. Two years more of the present work and *Ardea wardi*, as well as the large and small Egrets, will be as scarce as *A. zuerdemanni* is now. Cannot something be done to stop such wicked slaughter?"



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THE PRESENT CONDITION OF SOME OF THE BIRD ROOKERIES OF THE GULF COAST OF FLORIDA.*

BY W. E. D. SCOTT.

Third Paper.

FRIDAY, May 21. To-day all the skins that had been collected were laid out to air and dry in the deserted houses of the fish ranch. These ranches, which are used only during a few months in the fall, are frequent on the islands and keys along this part of the Gulf Coast. Sometimes there is but a single building, and again the number of houses, if they may be called houses, amounts to a dozen or even twenty. They are all built of poles and beams, and the entire structure, walls as well as roof, is thatched with palmetto leaves. They afford very good shelter and are picturesque to a degree.

The point where we were stopping is known as the Champion Ranch, from the principal schooner which makes this a headquarters during the fishing season.

Shore birds of various kinds, several species of Terns, Laughing Gulls, and White and Brown Pelicans were common at Big Gasparilla Pass, a mile north of the ranch where we had anchored. The American Oyster-catcher (*Hematopus palliatus*) was one of the conspicuous species along the beaches and was

* Concluded from page 22

evidently breeding. Among the Terns I noticed *Sterna maxima*, *S. sandvicensis acuflavida*, *S. forsteri*, *S. hirundo*, *S. antillarum*, and *Hydrochelidon nigra surinamensis*. All of these were abundant save the Cabot's Tern, which was apparently rare, and most of the species, *S. antillarum* excepted, were in flocks and had not begun to breed. *S. hirundo* had, with few exceptions, not completed the moult, and the same observation applies to *S. forsteri*, a large proportion of each species being still in immature or winter plumage, or beginning to assume the breeding dress. Black Skimmers were rather common, in flocks of from twenty to as many as several hundred, and Laughing Gulls were very abundant, in large flocks, and mostly in immature or winter plumage, the birds with black heads being only occasionally seen. I also saw now and again the American Herring Gull, and rather more frequently a Ring-billed Gull (*Larus delawarensis*). Florida Cormorants were uncommon at this point, being mostly at the breeding grounds, and the only Ducks seen were a pair of Florida Ducks (*Anas fulvigula*).

Very large flocks of *Charadrius squatarola* were conspicuous among the beach-birds, and Wilson's Plover was also abundant, and either breeding or about to breed. Here, too, I noticed a considerable number of Roseate Spoonbills (*Ajaja ajaja*). But all the birds, though in such large numbers, were very wild; most of the day was spent in trying to get a White Pelican; three of us tried to stalk the birds, but they were so very wary, having evidently been much hunted, that we not only did not get any but could get no nearer than three hundred yards of them. All the other species were well acquainted with the shotgun and with man, and were as wild and shy as I have ever seen birds anywhere. At night, the skins already taken being well aired and dried, I determined to proceed in the morning to the next pass to the north of this one, namely Little Gasparilla.

Saturday, May 22. Leaving Champion Ranch early, and with a light, fair breeze, we were soon at Little Gasparilla. After an early dinner, leaving Dickinson on the 'Tantalus,' Captain Baker and Wilkerson went with me in the tender to explore the islands and keys of what is known as Kettle Harbor. This locality, once famous as the breeding ground of Herons and kindred birds of the region, is the next large bay north of Charlotte Harbor, and, though not more than four miles wide, is

probably about fifteen miles long, and dotted all over with keys of greater or less extent, some of which seemed to present all the conditions most likely to induce birds to resort to them. But though we carefully explored this entire region, up to Stump Pass and for several miles beyond, we found no inhabited rookery, and saw only a few straggling Herons or an occasional Fishhawk or Kingfisher. At three points we found islands that had been in very recent times the breeding homes of Herons, Pelicans, and Cormorants, but they were absolutely deserted, and not so much as a single pair of Herons or other birds were found breeding at any of these places. Captain Baker had promised to show me a very large rookery on an island near Stump Pass, in this harbor, but on reaching the island we found it deserted, though it had evidently been in comparatively recent years the home of thousands of birds, for the evidences, in the way of excrement and fish skeletons, were to be seen all over the ground, and the old nests were in the trees by thousands. To make sure that birds did not roost here or at the other deserted rookeries in the harbor, we remained at a point where we could command a view of most of the ground until dark, and not a bird came to roost. By this delay we were so late in getting back to the narrow but long strait which connects Kettle Harbor with the waters above Little Gasparilla Pass that we found the tide so low we were obliged to remain in the small boat all night, the shore being nothing but mangrove swamps for a long distance back into the country.

Sunday, May 23. At daylight the tide had risen so that we began to make our way to the 'Tantalus.' In the afternoon we took the 'Tantalus' to another anchorage very close to the Pass, for I had determined to go north again as soon as the weather would permit.

Monday, May 24. The wind being directly ahead to-day and blowing hard, we remained at anchor and explored the neighboring beaches. The Captain found two lots of eggs of the loggerhead turtle on one of the beaches, which had been laid during the night. There were ninety odd eggs in one lot and upward of sixty in the other. Captain Baker told us that the business of hunting the loggerhead turtle for food, and also for the eggs, was carried on mainly during this time of the year, the breeding season, and that the number of turtles had been so

largely reduced in this way that it would be only a short time when it would be almost impossible to find a turtle where, a few years before, they had come to breed by hundreds.

The birds I observed here to-day were much the same as those already mentioned as found at the pass next below, except that Cabot's Tern seemed to be more common, and that during the several days of my stay here the Knot (*Tringa canutus*), the Red-backed Sandpiper (*T. alpina pacifica*), and the Sanderling (*Calidris arenaria*) were migrating north in flocks, which were constantly passing at short intervals throughout the day over the outer beach. Wilson's Plover, Least Terns and Willets were breeding in considerable numbers, especially the two former species, which were to be seen almost everywhere on the sands. The Turnstone (*Strepsilas interpres*) was also migrating north in flocks of from four to twenty and were quite abundant.

About four o'clock this afternoon a 'sharpie' schooner, some forty-five feet in length, came from the direction of Big Gasparilla Pass and anchored within two hundred feet of us. The crew to the number of four at once went on the beach and from the time they landed until dark there was a perfect fusilade. Going over to see what they were doing, I found that they were killing all kinds of shore birds and Least Terns. One of the men told me that this was Mr. Batty's boat, and that they were collecting birds for the 'plume market'; that Mr. Batty was down the beach shooting, and would be back for supper. They had bunches of Wilson's Plover (breeding), Least Terns, and various kinds of Sandpipers. These birds are skinned, partly filled out with cotton, and at once wrapped up in paper and packed away to be finished after reaching the North. They were killing and preparing by these methods, during the time I was near Mr. Batty's party, from a hundred to a hundred and fifty birds a day. I called on Mr. Batty later in the evening and learned something of his work.

Tuesday, May 25. This day was stormy with the wind fresh from the northwest. In the morning I went on the beach with Mr. Batty, and we shot Knots, Black-bellied Sandpipers, Sanderlings, and Turnstones over decoys, all these species being used by Mr. Batty in his feather business. At the same time two of Mr. Batty's men were killing Wilson's Plovers,

Least Terns, Boat-tailed Blackbirds, Gray Kingbirds, and any other small species that came in their way. The Least Terns are particularly in demand in the hat business, and Mr. Batty paid for such small birds as I have enumerated ten or fifteen cents each in the flesh. All Owls, and particularly the Barred Owl, are desirable. The feathers of these, as well as of Hawks, are bleached by processes that Mr. Batty described to me, and used for hats and other decoration. One of Mr. Batty's employes told me that they had left a party at the pass below, where they were killing the same kinds of birds, and that Mr. Batty was constantly purchasing and trading with native and other gunners for plumes and round and flat skins of all the desirable birds of the region. Not less than sixty men were working on the Gulf Coast for Mr. Batty in this way. From time to time, as we were together, I picked up these facts, and I have been careful to underrate rather than overestimate the destruction that was going on from this single source. I have been able, through parties working at various points between here and Cedar Keys, to very fully substantiate these statements.

Wednesday, May 26. This morning we started north again, leaving the party of plume hunters still killing beach birds and Least Terns at Little Gasparilla Pass. We went only a little way outside, as it proved to be very rough, and it was desirable to keep the material thus far collected in as good condition as possible. We went in at Kettle Harbor Pass and up through the same harbor already explored and described, stopping for the afternoon and night at Stump Pass, the upper outlet of Kettle Harbor.

On this beach we again found many eggs of the loggerhead turtle some of which — three or four out of the hundred obtained — had two yolks.

Thursday, May 27. Leaving Stump Pass early this morning with a light head wind, we went sixteen miles up the coast to a point known as Casey's Pass. As we left our anchorage I saw Mr. Batty's schooner headed to the northward, but it did not stop either at Casey's Pass or at Sarasota proper. At Casey's Pass we met a very intelligent man, a Mr. Frank Higel, who told me the same story of the extermination of birds that I had already heard so many times. He said that several years before, when he first came into this region, there were two large rook-

eries of Herons and kindred birds in the little harbor where we were now anchored, but they had been, as he termed it, 'broken up' by the efforts of various plume hunters, and that now it was almost impossible to find any Herons either breeding or roosting in the vicinity. He very kindly described an enormous rookery on the Manatee shore of Tampa Bay, at a point known as Bullfrog River, where he assured me thousands of birds had bred a few seasons before, and I determined to find the point from data and a rough map that he made for me of the region in question. The birds of this pass were about the same as I have already spoken of at Little Gasparilla, except that Knots did not seem so plenty, and Cabot's Tern was much more abundant. Many of these Terns (*S. sandvicensis aculeiflvida*) were observed in what seemed to be winter or immature plumage, and only now and then was an adult bird with a clear black cap observed. There may have been a hundred of this species fishing along the beaches and roosting in flocks on the sand points on either side of the pass. We did not notice any Herons, even at evening, when they are generally to be seen going to roost, though the country back of us seemed particularly adapted for breeding and roosting grounds.

Friday, May 28. It rained all this morning, but in the afternoon it was clear enough to go out on the beaches. Found the Cabot's Tern rather wild, but took nine in the course of the afternoon. Most of these are not in full plumage, but two of them are adult with very black caps and the plumage underneath of a most delicate blush-pink color, very like that seen on the feathers of the breast of the Roseate Tern, and occasionally in a high plumaged Laughing Gull. Here, too, were Forster's Terns in numbers, and *Sterna maxima*. These latter were about to breed, a female taken having eggs with shells almost formed. Some of the Cabot's Terns were moulting. Some of the Least Terns at this point had nests and others had not moulted out of the winter or immature plumage; and of the many *S. hirundo* seen and taken here, very few were in full plumage, most of them being moulting. All of the Forster's Terns were in the 'havell' plumage, and did not show any signs of moulting. From these data it is not improbable that many of the Terns, especially *S. hirundo* and *S. forsteri*, do not breed till after they are more than a year old; and I am inclined to think that this is also the

case with some of the commoner shore birds, notably *Macrorhamphus griseus* which I have seen in flocks of a dozen or more at John's Pass, on this coast, as late as June 20.

The migration of shore birds to-day was much the same as that noted at Little Gasparilla, Knots, Red-backed Sandpipers, Black-bellied Plovers and Sanderlings still going north in small flocks.

Saturday, May 29. At 10 A.M. to-day, the weather having cleared, we again started north and reached Big Sarasota Pass, where we went inside and anchored for the night. On the way we saw large flocks of Terns and Gulls, and all of the species spoken of above appeared to be quite abundant. This was marked in the case of Cabot's Tern, which was equally common with Forster's Tern. Other birds, such as Brown Pelicans and Man-o'-war Birds, were observed in very small numbers, and all of the species seen were wary and avoided as far as possible the vicinity of our boat. I learned from citizens at Sarasota that the bird rookeries, once so characteristic of the bay, were all deserted by their former occupants, the birds having been pursued without mercy by the plume hunters, and in all the cruising that I did in this bay I found no roosting or breeding places of Herons, Cormorants, or Pelicans.

Sunday, May 30. To-day was spent in cruising the shore of Sarasota Bay, which took all of the forenoon, and in the afternoon we were running up the Manatee shore of Tampa Bay, trying to find the bird rookeries that Mr. Frank Higel had told us of at Casey's Pass. We went along this shore till almost dark, looking carefully for any signs of birds. By half-past five in the afternoon we were some eighteen miles from the mouth of the Manatee River, which we had passed at one o'clock. This was near our objective point, and if the countless birds described by Mr. Higel as formerly breeding in this vicinity were anywhere within five miles of us, I felt pretty confident of seeing some of them going to roost after sundown. As a matter of fact, I did see some half a dozen Herons and about fifty White Ibises, all of them flying so far back into the interior that I lost sight of them. If there was any large rookery on this shore I was unable to find it, though a good part of the morning of the 31st was devoted to a closer inspection, and we used the small boat to go nearer to the shores than we could get in the 'Tantalus.'

Monday, May 31. Spent most of the morning, from daylight until 11 A. M., in exploring the shores in the small boat, and not finding anything that indicated the presence of breeding birds in the vicinity we finally gave up the search. I afterward learned from Mr. Alfred Mears, of John's Pass, that formerly there had been a very considerable rookery at this point, which had suffered, as had the others of the region, from plume hunters, and had finally been totally abandoned by the hundreds of birds which once frequented this point. Giving up the search for the rookery here, I determined to go across Tampa Bay proper and examine three places where I had been six years before, in Old Tampa Bay, at each of which points all of the commoner Herons, Brown Pelicans, and Cormorants were then breeding by hundreds.

The first of these rookeries was at a place known as Papy's Bayou, and we reached here late in the afternoon, but though I looked the once familiar ground over carefully, I found only a few Green Herons breeding, and at dusk perhaps twenty American Egrets came in to roost. We remained at anchor near here all night, and the scarcity of birds was as marked as at any point we had so far visited.

Tuesday, June 1. To-day was spent in visiting the other two places where I had once seen birds so abundant. One of these points is known as the Double Branches, and the other as Rocky Creek. Formerly I had seen birds breeding here in great numbers, and Reddish Egrets had been the most conspicuous feature of these breeding grounds in those days. But now how different! Not a single pair of birds of any kind did I find nesting, and only at rare intervals were any kind of Herons to be observed. Not a single Brown Pelican or Cormorant was seen, though a little island at Rocky Creek had once been the nesting ground of many hundred of each species. Not a Reddish Egret and only a few frightened and wary Louisiana Herons were seen, and these were not breeding. At one point a flock of Roseate Spoonbills were feeding on a sandbar, but we did not get nearer than a quarter of a mile to them. Formerly I had seen many hundreds of these birds feeding and roosting in the vicinity of these rookeries, and they were then so tame and fearless that one could approach so as almost to touch the birds. Late in the day I determined to go to the town of Pinellas, which is on old Tampa

Bay, to learn anything I could from the people there in regard to the birds of the region. We reached the town about half-past five, and though all that I could get in the way of information was negative in character, yet I saw many flat skins of Florida Cormorants in one man's possession, and when I told him of the Rosy Spoonbills I had seen that morning, he would hardly believe me, as the birds had not been seen in the neighborhood for a couple of years.

Wednesday, June 2. Leaving the little town of Pinellas early this morning we rounded Point Pinellas, and again were cruising northward in the direction of Tarpon Springs. About three miles from the extreme end of Point Pinellas, in Boga Siega Bay, is the group of islands that once formed what is known as Maximo Rookery. These islands are so close together, being only divided by shoal and narrow streams of salt water at high tide, that practically they form a single low island. This is at least two hundred acres in extent, and is covered with a dense growth of the several kinds of mangrove and forms a point particularly attractive to birds either as a roosting or breeding place. I had been here six years before, and it fairly teemed with bird life then. Every tree and bush on this large area contained at least one nest, and many contained from two to six or eight nests whenever the size of the tree permitted. A perfect cloud of birds were always to be seen hovering over the island in the spring and early summer months, and conspicuous among them were Brown Pelicans, Man-o'-war Birds, Reddish Egrets, Florida Cormorants, Louisiana Herons, American Egrets, Snowy Herons, Little Blue Herons, Great Blue Herons, and both kinds of Night Herons. I have tried to give them in the order of their abundance, though it is difficult to say, in such an immense congregation, which species predominated. Beside, in comparatively smaller numbers, and yet by hundreds, were White Ibises and Rosy Spoonbills. So far as I was then able to determine, all these species bred here save the Roseate Spoonbill and Man-o'-war bird, the latter being present to prey on the Pelicans and Cormorants, taking from them, whenever possible, the food intended for the young birds. It was truly a wonderful sight, and I have never seen so many thousands of large birds together at any single point.

We anchored the sloop just off the island and I went ashore

to see what birds I might find. From the water, as we approached, only a few Cormorants were to be seen, possibly seventy-five in all, and though I spent several hours looking over the various parts of the island I found no other large birds breeding—absolutely not a single pair of Herons of any kind; five or six Louisiana Herons feeding on a small sand flat at one of the extremities of the island were all the Herons observed in the vicinity.

When I previously visited this point A. Lechevallier had located on the mainland about three-quarters of a mile away; here he had built a house and was killing birds on the island for the feather market. He or his assistants had then been there a little over a year, and I am told by persons living near, whom I have every reason to believe, that it took these men *five* breeding seasons to break up, by killing and frightening the birds away, this once incomparable breeding resort. Of course there were other plume hunters who aided in the slaughter, but the old Frenchman and his assistants are mainly responsible for the wanton destruction. He regarded this as his particular preserve, and went so far as to order outsiders, who came to kill Herons and other birds, off the ground. The rookery being destroyed, he had now given up his residence here.

In the afternoon we went on to John's Pass and stayed there for the night. A few pairs of Snowy Herons and quite a number of Louisiana Herons were breeding at the little rookery spoken of in the first paper of this series, the young birds being from a few days to a week or more old.

I learned from Alfred Mears, that J. H. Batty had only just left here, he having killed many birds on the beaches, and quite a number at this rookery, and that he had offered to buy Heron's plumes, at stated prices each, from any of the residents who would collect for him.

Thursday, June 3. To-day I spent on the beach to the south of the pass, where I found all the Terns before enumerated in great numbers, particularly *Hydrochelidon nigra surinamensis* and *Sterna sandvicensis aculeiflvida*. Of this latter species I collected a fine series of some sixty birds, and took a few specimens, for comparison, of each of the other kinds. I hope at some future time to discuss the conditions of plumage of the species obtained this day in detail.

Beside the Terns, all of the species of beach birds spoken of at Little Gasparilla and Casey's Passes were observed here, migrating north in small flocks, but the aggregate would mount up to large numbers; and I can not but confess my surprise at this flight, so late in the season, of species that breed so very far north.

I met at this point a Mr. Edward Curry, whose post office address is Bonifacio, Hillsboro County, Florida, who confirmed very fully all that I had ascertained in regard to the destruction of birds during the breeding season on this coast.

Friday, June 4—Sunday, June 6. After leaving this pass on Friday our journey back to Tarpon Springs was uneventful, and I have fully discussed the ground we went over in the first paper of this series. We reached Tarpon Springs early on Sunday morning. As a result of this five weeks' cruise I had collected in all about two hundred and fifty birds, which have already been spoken of in detail.

At Tarpon Springs I learned that J. H. Batty was at Trouble Creek, a point six miles north of here, and later the men who had killed birds for him there, told me that he bought all the birds they could kill for him, except White Ibises. These included the more common of the smaller land birds, which were apparently as desirable as the water species. He took all Hawks and Owls, and also the Florida Quail. The prices paid for these birds in the flesh ranged from ten cents up to as high as seventy-five cents, and even a dollar for some kinds, such as the Great Blue Heron.

The facts I have presented in these papers have been mainly derived from my personal observation, and I have carefully avoided giving any information supplied from outside sources unless I felt sure that it was to be relied upon.

It is scarcely necessary to draw any conclusions or inferences. This great and growing evil speaks for itself. I have the name and addresses of some fifty dealers in various towns in Florida and the principal cities of the country. Merchants in New York and other centres are buying every month the skins and plumes of Florida birds. The price paid for such material, notwithstanding the efforts made to create sympathy for the birds, and a feeling against using the feathers for hats and other decorative purposes,

is each year becoming higher, showing how great is the demand and how profitable the traffic is to these men-milliners.

[ERRATA.—The first two papers of this series were published without the author being able to revise the proofs. He now sends the following list of errata :

Page 138,	line 24	for Boya Sieya	read Boga Siega.
" 138,	" 28	" Lechvallier	" Lechevallier.
" 213,	" "	" Nyakka	" Myiakka.
" 215,	" 6	" Rossa	" Rassa.
" 216,	lines 7, 24, 40	for Rossa	" "
" 221,	" 17, 20, 23, 25, 29, 35	for Rossa	" "
" 221,	" 29	for we	" he.
" 221,	" 27,	" Myakka	" Myiakka.
" 222,	" 6	" "	" "

Also in the Paper entitled 'Some Rare Florida Birds,' Punta *Rossa* on pages 133 and 134 should read Punta *Rassa*.—EDD.]

THE PINE FINCH (*SPINUS PINUS*) BREEDING AT CORNWALL-ON-HUDSON, N. Y.

BY J. A. ALLEN.

ON April 20, 1887, I went to Cornwall-on-Hudson, Orange Co., N. Y., where I remained till May 12, making my home at the residence of Mr. Daniel Taft. The house is in the midst of a lawn of several acres in extent, well set with fruit and shade trees, overlooking the Hudson.

On the day of my arrival a small flock of Pine Finches, busily hunting food in the pines and spruces, attracted my attention, but as the season was late and the weather still cold it was not, of course, a noteworthy occurrence. They continued to haunt the vicinity for several days, when all disappeared except a single pair. On the morning of May 3, I was surprised to see one of the birds gathering material for a nest. She was easily traced to the lower branch of a Norway pine, scarcely thirty feet from the piazza, and almost within reach of a little summer house overrun with a wisteria vine. The site chosen for the nest was the extremity of the branch, about eight or ten feet from the ground, and well concealed. Several times the little builder carried material to the nest while I was sitting in the arbor, almost within reach of it. Although I afterward carefully kept away, the birds seemed not fully satisfied with the exposed situ-

ation, and after the second day I noticed that nothing seemed to be added to the structure, and my fears that they had abandoned it proved true. Still the birds were about, and the female was often observed with bits of nest-material in her bill. A little patient watching disclosed the fact that a new nesting-site had been chosen,—this time the extremity of an upper branch of a neighboring Norway pine, about thirty-five feet from the ground, and about the same distance from the much frequented piazza of the house. As it was on the side of the tree toward the house, and nearly on a level with the windows of my room, I had a fine opportunity of watching the industrious little architects, although the nest itself was completely hidden from view by the dense pine needles in which it was placed.

One of the birds, presumably the female, did all the work, but was escorted to and from the nest by the male, who further manifested his interest and joy by a profusion of Canary-like *twee-e-ts* and other peculiarly sweet and pleasing notes. Later the birds were more silent and much less frequently seen;—it was evident that incubation had begun. Here was certainly a prize, which, in view of all the circumstances, it seemed hardly right to ignore; for the nests and eggs of the Pine Finch are by no means easy to discover, are still rare in collections, and the breeding of the species so far south of its usual summer home a noteworthy event; yet it required no slight struggle with tender feelings to decide to break up the happy home, even in behalf of science, and of the museum whose ornithological interests I may be supposed to have deeply at heart.

On May 12 I enlisted the services of my young nephew, R. T. Swezey, who kindly ascended to the nest on a tour of observation, finding, as was anticipated, a full clutch and the female sitting. She remained on the nest till his hand touched the branch on which the nest rested, when she flew off with a great outcry and dashed frantically about for some seconds, passing and repassing within a few yards of the nest, uttering such plaintive notes of distress as to make the task of securing the prize indeed a sad one. The nest was placed at the base of a bunch of cones within a few inches of the extremity of the branch, and being thoroughly shielded on all sides by the strongly resisting, long, sharp needles, it was no easy matter to reach out to the nest and, inserting the hand, safely remove the coveted treasures. The four

eggs were, however, secured without accident, the nest was removed *in situ* by taking with it the supporting branch; the male joined his mate in her distress and both were shot and, with the nest and eggs, added to the oölogical rarities of the American Museum of Natural History, where, in due time, they will form one of the attractive 'Bird Groups' of the exhibition collection.

The four eggs measure (in millimetres) as follows: 18×12.5 , 18×12 , 18×12 , 17×11 . The ground color is pale bluish white in all, but the markings vary greatly. In one the greater part of the surface is marked with sharply-defined dots and specks of dark reddish brown, but more thickly aggregated about the larger end. In another the spots are larger, fewer and paler, and more vinaceous in tint, and are mostly on one side of the egg near the larger end. In a third the markings, which nearly cover and are mostly confined to the larger end, are pale, not well defined, and vinaceous brown; beside these are several conspicuous blotches of blackish brown, the largest of which is near the larger end of the egg. In the remaining egg the markings form a single narrow streak of sienna brown nearly encircling the egg at its thickest point; it begins in a coarse blotch of blackish brown, from which proceeds a narrow line encircling the egg, becoming narrower and paler as it advances, and finally quite indistinct, it much resembling the narrow pencillings seen in the eggs of many Orioles. This egg in respect to markings is as different from the egg first described as are the eggs of the Field Sparrow and Chipping Sparrow.

The nest is well-built, neat, and compact, and quite large for the size of the bird. It measures 57 mm. ($2\frac{1}{4}$ inches) in inside diameter, 90 mm. ($3\frac{1}{2}$ inches) in outside diameter, and 37 mm. ($1\frac{1}{2}$ inches) in depth (inside measurement). The base of the nest is formed of string, thread, a long piece of tape, and rootlets woven into the pine needles on which it rests, some of the strings and the tape being looped about and bound to the clusters of needles. On this rests a cup-shaped structure of coarse and fine rootlets and soft vegetable fibre, lined with black horse-hair.

The nest found by Dr. A. K. Fisher at Sing Sing, N. Y. (Bull. Nutt. Orn. Club, VIII, 1883, p. 180), and the one found at Cambridge, Mass., in May, 1859, are, so far as I am aware, the only recorded instances of the breeding of this species south of the Canadian Fauna.

THE AMERICAN CROSSBILL (*LOXIA CURVI-ROSTRA MINOR*) IN LARGE NUMBERS NEAR CHARLESTON, S. C.

BY ARTHUR T. WAYNE.

IT will doubtless be interesting to the readers of 'The Auk' to know that the Red Crossbill has been very abundant at McPhersonville, a beautiful little village four miles from Yemassee and about sixty miles from Charleston, during the months of November and December, 1886, and January and February, 1887.

The first intimation I had of the bird in question as having been captured near Charleston was from my friend Dr. G. E. Manigault, the well-known osteologist, who called to tell me of the good news on Sunday evening, in the early part of January, 1887. Dr. Manigault received a very fine adult male from a gentleman at McPhersonville, to whom is due the credit of adding the Red Crossbill to the birds of South Carolina.

This gentleman is W. D. Gregorie, Esq., who has observed the habits of birds around Yemassee and vicinity for years, and is a great enthusiast in matters pertaining to ornithology, and whose knowledge of the birds of that region is very great.

I wrote Mr. Gregorie, in the latter part of January, to secure specimens of the Crossbill for me, and after the lapse of a few days I received from him three fine specimens, a male and two females. I therefore resolved to explore the country around Yemassee for a day, with the hope of seeing the bird alive, and left Charleston on January 28. The result of this day's trip rewarded me by the capture of a female, which I shot out of a pine tree one hundred feet high; the bird was feeding on a burr. I also had the pleasure of seeing a large flock of about twenty individuals. I secured during my stay only a single example. Although I was somewhat discouraged, I did not give up hope, but determined to visit Yemassee again and explore the country thoroughly.

During my stay at Yemassee, from February 5 to 14, I was the guest of Mr. Gregorie, and he took me to the best localities where I would be sure to get the Crossbills. My stay was a very pleasant and satisfactory one and I will give the result in detail: On February 7, I shot thirteen examples, five

males, and eight females; on February 9, four males; on February 11, a male and a female; February 12, four males. The result of my collecting was twenty-three examples,—fourteen males, and nine females. I studied with much care the habits of the Crossbill.

They go in flocks of from six to forty individuals, and fly in the manner of the American Goldfinch (*Spinus tristis*), but their flight is generally very high and greatly protracted; their note while on wing is very similar to the cry of young chickens. They always alight in the tops of the pines, and each individual then gets a burr, to see if it contains 'mast.' I have seen as many as three birds on one burr. I shot several out of a tree, and the rest did not even take wing but kept on feeding. They frequent only the pine woods, and feed wholly on the seeds contained in the burrs of the long-leaved and short-leaved pines. I examined the crops of every bird I killed, and found them crammed with the seeds of the pine.

I have shot them from the tops of the dead pines, among the burrs; but they rarely resort to the dead pines unless they are frightened by Hawks.

The Crossbills were at Yemassee in large numbers—over a thousand—where they arrived about the last of November, and were still there as late as February 15.

The weather for a week in February was very hot and sultry, the thermometer registering 80° in the shade for several days, and in the sun would probably have reached 90°, but Crossbills were then as thick as Blackbirds. The only reason I can see for their remaining there for so long a time is that the 'mast' was to be found in abundance.

I cannot refer to a single record of the occurrence of this bird in South Carolina, much less on the sea-board, except that given by Audubon, who refers to one shot out of a flock near Charleston by his son. This, so far as I am aware, is the only record for South Carolina, save the one I give.

The credit of adding this bird to the fauna of South Carolina is due to Mr. Gregorie, for had he not shot and sent the specimen to Dr. Manigault, I would never have had the pleasure of making the present record.

Mr. Gregorie says that the Crossbills were abundant at Yemassee in the winter of 1872 or 1873, but were not in such num-

bers as they have been this year. He also adds that he has not seen them until this winter since they appeared in 1872 or 1873.

My series of specimens from Yemassee embraces twenty-nine examples, representing every stage of variation.

Since writing the foregoing I visited Yemassee again, and on April 1, 1887, one of my collectors shot thirteen specimens; on April 2 I shot a single specimen; again on April 4 my collector brought me ten specimens. The number of specimens killed in April was about thirty, as several were thrown away being in poor plumage.

I visited Yemassee again in May and found the Crossbills still there, but not in such numbers as in April. My collector brought me a female on May 6, and a male on May 19. These two specimens were the only ones taken in May. The Crossbills were seen for the last time on May 22, but I am under the impression that some of them remained until the first of June, when they all left for their breeding grounds in the mountains.

I am positive that none of the Crossbills bred at Yemassee, as the ovaries in the females were about the size of No. 10, shot in April and May and all the previous months.

The Crossbills were not confined to Yemassee and vicinity alone, for they were shot at Hampton C. H., and at Brunson, in Hampton County. My opinion is that they were scattered all over Hampton County.

The departure of the Crossbills late in May to their breeding grounds may prove that the Crossbills which breed in the mountains of North Carolina do not breed until the summer, and, curiously enough, in this respect are very different from the Crossbills of the North, which breed in the winter and early spring months.

BIRDS OF TOM GREEN AND CONCHO COUNTIES, TEXAS.

BY WILLIAM LLOYD.

(Concluded from p. 193.)

133. *Cyanocitta cristata*. BLUE JAY. — Abundant in Zavalla and Dimmit Counties, near Eagle Pass, on the Rio Grande. Its limit to the

west seems to be near the mouth of the Main Concho, where it is tolerably common. Seen in northern and western Concho County only in the fall. Does not occur in Tom Green County, where it is replaced by the next species.

134. *Aphelocoma woodhousei*. WOODHOUSE'S JAY. — Resident wherever there is shin-oak, at the heads of nearly all the creeks. Tolerably common. Nest with three eggs found April 19, 1885, on Spring Creek, in low underbrush; and another, same date and position of nest, with three young.

135. *Corvus corax sinuatus*. AMERICAN RAVEN. — Occasional visitor at all times of the year, both in Concho and Tom Green Counties. Nest with six eggs found May 15, 1883, in mesquit.

136. *Corvus cryptoleucus*. WHITE-NECKED RAVEN. — Resident; abundant at times. The bulk retire in fall in large flocks down the Pecos and Devil's Rivers, where they winter by thousands. A nest with six eggs found May 19, 1882, in a low hackberry; another nest, partly finished, was found May 13, 1883, and a third, with three eggs, May 5, 1885, in low mesquits.

137. *Corvus americanus*. AMERICAN CROW. — Abundant in summer. Breeds in colonies, in the eastern part of Concho County, the beginning of May.

138. *Molothrus ater*. COWBIRD. — Spring and fall, in migration.

139. *Molothrus ater obscurus*. DWARF COWBIRD. — Abundant in summer. Lays in the nests of Vireos, Nonpariels, Orchard Orioles, etc.

140. *Xanthocephalus xanthocephalus*. YELLOW-HEADED BLACKBIRD. — Abundant spring and fall migrant. A flock seen June 25, 1886, in Pecos County.

141. *Agelaius phœniceus*. RED-WINGED BLACKBIRD. — Abundant spring and fall migrant. Wintered the present year in large numbers in Concho County, for the first time (except stragglers)—a fact attributable to the greater area in cultivation in this locality, this area increasing year by year and exercising an appreciable effect on the bird life. The males keep in separate flocks with the young males; a few of the latter, however, are found with the females.

142. *Sturnella magna*. MEADOW LARK. — Abundant during migrations.

143. *Sturnella magna neglecta*. WESTERN MEADOW LARK. — Resident. Especially abundant in fall and winter. Nest generally in a rabbit form. In 1882 nests were found March 27, two eggs, and April 15, five eggs; in 1883, April 24, five eggs; in 1885, May 10, five young.

144. *Icterus spurius*. ORCHARD ORIOLE. — Abundant in summer. The males arrive about April 13, followed by the females four or five days later. Common on April 21. The males depart very early; none noted for four years after August 5, while the females and young are noted from September 4 to 15. Breeds in hanging nests on mesquits. Earliest clutches May 19 (four eggs), and June 1 (five eggs).

145. *Icterus bullocki*. BULLOCK'S ORIOLE. — Tolerably common, espec-

ially on the main streams. I noted a male, evidently a straggler, April 6. The ordinary date of arrival is April 15 to 20, the birds becoming common about April 24. The females are very retiring. The males are seen with the family as late as September 30. Breeds on the top branches of the mesquit. Nest similar to that of the last; both elaborately woven out of horse-hair and lined with wool. A sprig of mistletoe is generally woven into one side of the nest. Clutches found May 15, two; May 16, six; May 28, five, and June 1, six. In all except two the clutch was six, the others having respectively five and four.

146. *Scolecophagus cyanocephalus*. BREWER'S BLACKBIRD. — Fall migrant, wintering occasionally in Tom Green County. Abundant in winter further south, in the Neuces Cañon.

147. *Quiscalus quiscula æneus*. BRONZED GRACKLE. — Abundant spring and fall migrant. Some specimens can hardly be separated from eastern ones. A few winter in Tom Green County.

148. *Carpodacus purpureus*. PURPLE FINCH. — One specimen, shot by Mr. Loomis, October 20, 1886.

149. *Spinus tristis*. AMERICAN GOLDFINCH. — Common in fall, arriving middle of August.

150. *Spinus psaltria*. ARKANSAS GOLDFINCH. — Rare fall migrant. Taken on South Concho, end of August.

151. *Rhynchophanes mccownii*. MCCOWN'S LONGSPUR. — Abundant winter visitor. Arrives November 5, leaves in March.

152. *Poocætes gramineus*. VESPER SPARROW. — Tolerably common in fall, in eastern part of Concho County.

153. *Poocætes gramineus confinis*. WESTERN VESPER SPARROW. — Resident. Tolerably common in winter in old cane fields. Nearly all leave in spring, but are probably common in the western half of Tom Green County. Nest found on the Plains May 16, 1885, with four eggs. In fall, in flocks on the Plains; in winter in pairs.

154. *Ammodramus sandwichensis alaudinus*. WESTERN SAVANNA SPARROW. — Resident. Tolerably common. No nest identified with certainty. Found near cultivated fields, and in marshy or boggy land.

155. *Ammodramus bairdii*. BAIRD'S SPARROW. — Rare fall visitor, shot in cane fields. Winters abundantly west of Tom Green County.

156. *Ammodramus savannarum perpallidus*. WESTERN GRASSHOPPER SPARROW. — Resident. Tolerably common in Concho County in fall; at other times rare. Two nests found at the edge of the Plains in Tom Green County; one May 17, 1885, with four eggs; the other May 22, 1885, four eggs.

157. *Chondestes grammacus strigatus*. WESTERN LARK FINCH. — Abundant summer visitor. Arrives in flocks March 24, earliest noted; departs October 8. Migrants pass through from October 25 to November 5. Breeds April 26 to June 5. Raises two broods. Clutch 4-5. Nest in bushes or on the ground.

158. *Zonotrichia querula*. HARRIS'S SPARROW. — Rare fall migrant in eastern Concho County.

159. *Zonotrichia leucophrys*. WHITE-CROWNED SPARROW. — Abundant winter visitor, in Concho County. Arrives the middle of October and remains until May. Frequently found in immense flocks. In song all winter on sunny days.

160. *Zonotrichia intermedia*. INTERMEDIATE SPARROW. — Common winter visitor in Tom Green County; tolerably common in Concho County. Arrives same time as the last in small flocks of six to twelve.

161. *Spizella socialis*. CHIPPING SPARROW. — Tolerably common in small flocks of four to six in Concho County, in fall and early winter. A few remain until spring.

162. *Spizella socialis arizonæ*. WESTERN CHIPPING SPARROW. — Resident in Tom Green County. Tolerably common in winter; rare in summer. Breeds. A nest, the only one met with, found on Spring Creek, May 8, 1885, in a low chapparal bush, contained four eggs fully incubated.

163. *Spizella pallida*. CLAY-COLORED SPARROW. — Abundant in spring and fall.

164. *Spizella breweri*. BREWER'S SPARROW. — Tolerably common in Tom Green County in fall. Winters in abundance in Pecos County.

165. *Spizella pusilla*. FIELD SPARROW. — Tolerably common in small flocks of from four to five in fall; rare in winter. Not noted in Tom Green County.

166. *Spizella pusilla arenacea*. TEXAS FIELD SPARROW. — Rare in fall and winter in Tom Green and Concho Counties.

167. *Junco hyemalis*. SLATE-COLORED JUNCO. — Common in winter. Arrives middle of October and remains until end of March.

168. *Junco hyemalis oregonus*. OREGON JUNCO. — Tolerably common in Tom Green County in winter. Occurs on the Main Concho in Concho County, in limited numbers.

169. *Amphispiza bilineata*. BLACK-THROATED SPARROW. — Common resident. This species has extended east within the last six years to the Colorado River. Breeds, raising two broods. Nests in cat-claw or chapparal bushes. Nests found May 6, May 13, June 12, July 13. The eggs have a bluish tinge until blown, when they become pure white. A valuable and pleasing songster. Sings about noon every day after middle of March.

170. *Peucaea aestivalis bachmanii*. BACHMAN'S SPARROW. — Summer visitor in eastern Concho County. Nests found May 20 to June 1; eggs invariably four.

171. *Peucaea cassini*. CASSIN'S SPARROW. — Common summer visitor in Tom Green County, and tolerably common in Concho County in fall. Breeds on the Plains at the head of Spring and Dove Creeks. Four nests, found May 25, 27, and 29, had five eggs in each. Nests in low bushes, not higher than one foot from the ground, or in tufts of grass. A remarkable songster during the breeding season. Like the last species, it ascends in spirals about twenty feet, singing, the apex of its flight marking the termination of its song. Alights often on the same bush and again soars.

172. *Melospiza fasciata*. SONG SPARROW. — Tolerably common in winter in Tom Green and Concho Counties.

173. *Melospiza lincolni*. LINCOLN'S SPARROW. — Tolerably common during spring and fall migrations from the Pecos east to Colorado. Lingers in cane fields until Christmas.

174. *Melospiza georgiana*. SWAMP SPARROW. — Rare in spring migration in Concho County. Winters on the edge of the Plains at the head of the South Concho (Tom Green County).

175. *Pipilo erythrophthalmus*. TOWHEE. — Occasional winter visitor in Tom Green and Concho Counties. Two were shot in January, 1884.

176. *Pipilo maculatus arcticus*. ARCTIC TOWHEE. — Winter visitor. Tolerably common in suitable places. Arrives October 8, and remains until the first week in May.

177. *Pipilo fuscus mesoleucus*. CANON TOWHEE. — Resident and tolerably common in Tom Green County. Mr. Loomis shot three in the fall of 1886 in Eastern Concho County. Nest with three incubated eggs, in fork of small live oak in Tom Green County, found April 12, 1885. Nests found further west contained five eggs; so three is an exception. The A. O. U. 'Code and Check-List' gives its habitat as "Valley of Upper Rio Grande"; it should now include Valley of the Conchos to Colorado River. Heard its song only once, August 12, 1884.

178. *Pipilo chlorurus*. GREEN-TAILED TOWHEE. — This bird must be spreading east, as I see it as far east as the head draws of the Middle Concho. Common on the east side of Pecos River. Probably breeds.

179. *Cardinalis cardinalis*. CARDINAL. — Abundant resident. Very small flocks of this species are found in the river bottoms in winter. None seen west of the head draws of the creeks that rise in the Plains. Raises two broods. Earliest clutch found April 7; latest June 30.

180. *Pyrrhuloxia sinuata*. TEXAN CARDINAL. — Accidental visitor in Tom Green County. One was shot in May, 1885. I hear they occur in winter in the eastern part of Concho County, but have not seen them.

181. *Habia melanocephala*. BLACK-HEADED GROSBEEK. — Rare summer visitor; probably breeds. Shot a male August 5, 1886, in Concho County. No nests found. This supplements Mr. Geo. H. Ragsdale's record of one observed in spring at Colorado City, on the Texas and Pacific Railroad.

182. *Guiraca cærulea*. BLUE GROSBEEK. — Tolerably common migrant in fall, from the Pecos River to the Colorado River; breeds abundantly further west.

183. *Passerina cyanea*. INDIGO BUNTING. — Rare fall migrant in Tom Green County. One was observed June 5, 1883, in Concho County.

184. *Passerina ciris*. PAINTED BUNTING. — Common summer visitor. Raises two broods. Nests found from May 12 to July 14. Clutch 4-5. Builds generally in hackberry, but often in cat-claw and chapparal. The males arrive April 27 to 30 in small flocks. One female recorded April 19, 1885, but for two other years the females came after the males. A well known and delightful songster. The young female does not assume full plumage until the second year.

185. *Spiza americana*. BLACK-THROATED BUNTING. — Abundant spring and fall migrant. Appears in wandering flocks through the summer, but I know of no instance of its breeding. This is another bird, which, like the Black-throated Sparrow, six years ago scarcely known, is now abundant.

186. *Calamospiza melanocorys*. LARK BUNTING. — Abundant in winter in immense flocks. Arrives the beginning of November and stays until the first week in March. Frequents grain fields.

187. *Piranga ludoviciana*. LOUISIANA TANAGER. — A male was shot by Mr. Cope in the spring of 1886 in South Concho.

188. *Piranga erythromelas*. SCARLET TANAGER. — Accidental in Tom Green County in the spring of 1885. Described as being tolerably common in spring migration, in eastern Concho County.

189. *Piranga rubra*. SUMMER TANAGER. — Tolerably common summer visitant. Males arrive April 6; the females April 24. Breeds. No nest found before June 3, and June 6. Nest, like the Cardinal's, generally made on a branch of a low pecan on the main streams; never away from the water. Departs September 10.

190. *Progne subis*. PURPLE MARTIN. — Common summer visitant in suitable places. Breeds about the towns in colonies. Arrives the last of February; departs November 1.

191. *Petrochelidon lunifrons*. CLIFF SWALLOW. — Common summer visitant. Arrives early in April. I believe they raise two broods. Sometimes breed in barns. First nest, found under a bluff, May 4, with three eggs; another July 20, with four fresh eggs.

192. *Chelidon erythrogaster*. BARN SWALLOW. — Common summer visitant. Breeds about settlements, raising two broods. Nest with four eggs found August 1, 1883, at Paint Rock, Concho County.

193. *Tachycineta thalassina*. VIOLET-GREEN SWALLOW. — Fall migrant in Concho County; observed and taken September 1, 1885; seen October 1, 1886. Not recorded in Tom Green County.

194. *Clivicola riparia*. BANK SWALLOW. — Rare fall migrant in Concho County.

Swallows are numerous in fall (September to end of October), but as they often fly at great heights, it is impossible to procure or identify them.

195. *Ampelis cedrorum*. CEDAR WAXWING. — Abundant in fall and again in spring. A few winter, feeding on the mistletoe berries — about the only berry left after January 1. Winter all over Western Texas. One shot in the fall of 1886 had orange tips to the tail-feathers.

196. *Lanius ludovicianus excubitorides*. WHITE-RUMPED SHRIKE. — Abundant resident. Nests found from April 27 to May 21. Clutch six (in rare instances five). I first heard its song in September, 1884, and could hardly imagine the vocalist was a Shrike. Its song is a very pleasing one, in a minor key, as if practising. Since that date I have heard it frequently in the fall, from September to the middle of November. It is also an accomplished mimic, imitating *Sturnella magna neglecta* perfect-

ly. It lives on grasshoppers when it can procure them, and in winter, when the weather is severe, takes to carrion. I found one in January, 1884, so gorged from feeding on a dead sheep that it could not fly. In the Davis Mountains it lives in winter on large coleoptera. In spring it occasionally kills birds. I have seen *Spizella socialis arizonæ*, *Vireo belli*, *Polioptila cærulea*, and others, amongst its victims, and in summer it has a fancy for nestlings. It is usually very tame.

197. *Vireo olivaceus*. RED-EYED VIREO. — Abundant summer visitor in Tom Green County. Only noted during the fall migration in Concho County. Arrives April 11, after the Black-capped Vireo and on the same day as Bell's. Comes in pairs; nest found May 6, 1885, with six eggs. A pleasing songster.

198. *Vireo gilvus*. WARBLING VIREO. — Rare spring migrant. Not noted in Concho County.

199. *Vireo atricapillus*. BLACK-CAPPED VIREO. — Tolerably common in Concho County, during the fall migration. Breeds in two localities in Tom Green County. The males arrive April 6, the females the 7th. Though silent on arrival, by the 10th the famous song of the male is heard, and is continued through the summer until the middle of August. The song is loud, clear, and very musical, and the singer generally selects some blasted pecan stump for the site of his vocal efforts. The female has also a song, sweet, but not particularly noticeable. This joyous habit led me to look for the vocalist, April 28, 1885, and I soon discovered him sitting on a nest just completed. I found three other nests in the same way. The nest was always in some low tree at the edge of thick shrubbery, and is at once distinguishable from that of Bell's Vireo, which breeds in the same vicinity, in that the latter is lined with wool, while the Black-cap's is not. The eggs are pale white, as stated by Dr. Cones and others, and a full clutch is 4-5. Leaves Tom Green County altogether from August 20 to 25, but lingers in Concho County until the last week in September. This record fills part of the gap between Mr. Nathan C. Brown's record at Boerne, Mr. Ragsdale's in Cook County, and Col. Goss's in Kansas.

200. *Vireo noveboracensis*. WHITE-EYED VIREO. — Fall migrant. Two secured in Concho County, October, 1886. The eyes were pink in the specimens shot.

201. *Vireo belli*. BELL'S VIREO. — Abundant summer visitant. Arrives about the same day as the Red-eyed Vireo, and stays until the middle of September. Raises two broods. Nests found May 6 to July 6. Average clutch, six. One nest found May 8, 1884, had eight eggs. A tireless songster, but there are so many fine singers in this district that it does not attract much attention.

202. *Mniotilta varia*. BLACK-AND-WHITE WARBLER. — Common during migrations. Arrives April 12-13; departs September 12-14. I believe some breed, as I have seen them in June, but as they frequent the main stream, it would be only by chance that their nest could be found.

203. *Helminthophila ruficapilla gutturalis*. CALAVERAS WARBLER. — This western representative of the Nashville Warbler is abundant in fall,

with the Orange-crowned; seen on the Plains with Bell's Vireo, Blue Grosbeak, etc., in October, 1885.

204. *Helminthophila celata*. ORANGE-CROWNED WARBLER. — Abundant in the fall migration (may be var. *lutescens*).

205. *Helminthophila peregrina*. TENNESSEE WARBLER. — Early fall migrant in Tom Green County. Tolerably common.

206. *Dendroica æstiva*. YELLOW WARBLER. — More abundant than all the other Warblers together in spring and fall. A few may breed, as I have seen them during all the summer months.

207. *Dendroica coronata*. MYRTLE WARBLER. — Spring migrant. Tolerably common, May 13.

208. *Dendroica auduboni*. AUDUBON'S WARBLER. — Tolerably common spring and fall migrant. Arrives in spring, May 13. In fall I saw it in crossing the Plains the first week in October, and shot two from a flock as late as October 20, 1886, in Concho County.

209. *Dendroica cærulea*. CERULEAN WARBLER. — Saw small flocks of five to eight in crossing the Plains, the middle of October, 1885.

210. *Dendroica chrysoparia*. GOLDEN-CHEEKED WARBLER. — One was shot in a hackberry in April, 1887. Its stomach contained winged (female) ants.

211. *Dendroica virens*. BLACK-THROATED GREEN WARBLER. — Common fall migrant, from August 1 to September 20.

212. *Dendroica townsendi*. TOWNSEND'S WARBLER. — Rare migrant in spring and fall. Arrives May 8. Undoubtedly breeds in Tom Green County, near the plains, in a dense swampy undergrowth full of springs, about five miles in circumference. Seen May 31 and July 31, in thickets some two miles from the river, along which it migrates. In fall seen from September 1 to 12, on Lipan Creek (Euterpe on map), where one was killed on the 10th by Mr. Loomis. Shot September 5, in Tom Green County. Mr. Henshaw, in 'The Auk,' speaks of it as occurring on the Upper Pecos. The A. O. U. habitat is east as far as Western Colorado and south into Mexico; hence this record considerably extends the range of this species to the south and west.

213. *Seiurus aurocapillus*. OVEN-BIRD. — Overlooked until September 10, 1886, when I shot one specimen and saw another in Concho County.

214. *Geothlypis philadelphia*. MOURNING WARBLER. — Tolerably common in fall migration in Concho County. None seen after September 1. Feeds on ants. Mr. Sennett's record is the only other notice I can find of this species in Texas.

215. *Geothlypis macgillivrayi*. MACGILLIVRAY'S WARBLER. — Abundant from Castle Hill to Pecos River. Probably breeds.

216. *Geothlypis trichas occidentalis*. WESTERN YELLOW-THROAT. — Abundant spring and fall migrant.

217. *Icteria virens*. YELLOW-BREASTED CHAT. — Tolerably common during the spring migrations.

218. *Icteria virens longicauda*. LONG-TAILED CHAT. — Abundant summer visitor, especially in dense undergrowth. Very numerous in the

swamps above mentioned, where I believe Townsend's Warbler breeds. Arrives in pairs the middle of April; all are mated by the end of April. They have a peculiar breeding cry,—like the sound of a gate swinging on rusty hinges, easily and successfully imitated to procure specimens. I found its nest May 6, 1885, at the edge of a thicket in a low bush; clutch four. All summer it is a most admirable mimic, and frequently throws such ventriloquial powers into its voice as to make the vocalist seem anywhere but where he is. Migrates leisurely, and is not finally lost sight of until October 1.

219. *Sylvania pusilla*. WILSON'S WARBLER.—Abundant spring and fall migrant. In fall every storm brings a fresh lot of this Warbler, the Golden, Nashville, Orange-crowned, and others. They linger often only a few hours, and there is a lull in the migration until the next storm. Abundant all over Western Texas from April 2 to May 15, and from September 3 to 30.

220. *Sylvania canadensis*. CANADIAN WARBLER.—One was shot from a flock of six, about the end of August, 1885, in Concho County.

221. *Setophaga ruticilla*. REDSTART.—Abundant during the fall migration from August 31 to September 10, in Concho County.

222. *Anthus pensilvanicus*. AMERICAN PIPIT.—Common in fall migration; less common in spring.

223. *Anthus spragueii*. SPRAGUE'S PIPIT.—One was shot in January, 1885, in Tom Green County, at the edge of the Plains. A small flock was seen in Concho County, October 15, 1886.

224. *Oroscoptes montanus*. SAGE THRASHER.—Tolerably common resident in Tom Green County. Winters in Concho County, as far east at least as Colorado. No eggs found but I have seen scores of nests.

225. *Mimus polyglottus*. MOCKINGBIRD.—Abundant resident. Locally migratory in winter. Raises two broods, perhaps three. Nests found from April 15 to July 16. Clutch 4-5. Sings all through the winter, and often at night. A great scold, and in winter has a special enmity to Flickers.

226. *Galeoscoptes carolinensis*. CATBIRD.—Occasional migrant in spring and fall, in the eastern part of Concho County.

227. *Campylorhynchus brunneicapillus*. CACTUS WREN.—A summer bird, and probably resident in Tom Green County on the Plains. Seen migrating south with other birds September 30, 1885. Abundant in July, on the line of the Texas and Pacific Railroad. No nests found within our limits, but just outside (west) one was found May 6, containing three young, and on May 16 one with six eggs, in a palma cactus.

228. *Salpinctes obsoletus*. ROCK WREN.—Common winter visitor, from October 7 to May 1. Breeds further west.

229. *Thryothorus ludovicianus*. CAROLINA WREN.—Rare winter visitor; seen only on Spring Creek, in Tom Green County. Probably breeds, as a pair were noted in a thicket, May 6, 1885.

230. *Thryothorus bewickii bairdii*. BAIRD'S WREN.—Resident; common. A fine singer from early spring till fall. Breeds anywhere; in old

coat sleeves, behind mirrors, in piles of sacks, in old posts. Raises two broods; eggs 4 to 6. Nests April 15 to June 5.

231. *Troglodytes aëdon parkmanii*. PARKMAN'S WREN. — Very common in the fall in Concho County.

232. *Cistothorus palustris*. LONG-BILLED MARSH WREN. — Spring migrant, in both counties. Rare.

233. *Certhia familiaris americana*. BROWN CREEPER. — Tolerably common winter visitor. Arrives October 15.

234. *Sitta carolinensis*. WHITE-BREADED NUTHATCH. — Resident. Rare. Shot in June and January. Found in both counties. No nests known.

235. *Parus atricristatus*. BLACK-CRESTED TITMOUSE. — Resident. Tolerably common. Breeds in old Woodpecker holes. Nest found April 15, 1885, and two others April 18 and 20. This is another species that is spreading eastward. Four years ago they were rarely found except on the main river. Now each creek has a family or two, as far east as the Colorado River. I have found this the prevailing species from here to El Paso.

236. *Parus atricapillus*. CHICKADEE. — One taken during the spring migration in eastern Concho County.

237. *Parus carolinensis*. CAROLINA CHICKADEE. — One taken during spring migration in eastern Concho County. A pair found wintering on the river in 1886.

238. *Regulus satrapa*. GOLDEN-CROWNED KINGLET. — Tolerably common during the fall migration. A few winter in Concho County.

239. *Regulus calendula*. RUBY-CROWNED KINGLET. — Abundant from October 1 to April 10.

240. *Polioptila cærulea*. BLUE-GRAY GNATCATCHER. — Abundant summer visitant. Arrives in pairs March 13; common March 24. Last seen in 1884, October 5; in 1886, October 8. No eggs found, but nests with young (5 each) May 1 and 12.

241. *Turdus ustulatus swainsoni*. OLIVE-BACKED THRUSH. — Fall migrant. Rare in Tom Green County; not observed in Concho County.

242. *Turdus aonalaschkæ*. DWARF HERMIT THRUSH. — Tolerably common fall migrant. Noted every day from September 20 to October 10; to at least Fort Stockton, crossing the Plains.

243. *Turdus aonalaschkæ auduboni*. AUDUBON'S HERMIT THRUSH. — Spring migrant. Tolerably common in Tom Green County; rare in winter in Concho County. Noted for the first time in 1886-87.

244. *Turdus aonalaschkæ pallasi*. HERMIT THRUSH. — One taken during the spring migration in eastern Concho County.

245. *Merula migratoria*. AMERICAN ROBIN. — Tolerably common in spring and fall. A few winter in the river bottoms and abundantly further south.

246. *Merula migratoria propinqua*. WESTERN ROBIN. — Rare in fall in Concho County. A few winter in Tom Green County. Abundant in winter west of this county.

247. *Sialia sialis*. BLUEBIRD.—Resident in portions of Concho County. Very common in spring and fall. They wander considerably after January 1, in search of berries, which are very scarce. Associates frequently with the two next. A nest was found in a hole in an old stump in July, 1882, with four eggs. Young in spotted plumage shot throughout August.

248. *Sialia mexicana*. WESTERN BLUEBIRD. — Rare winter visitant. Shot in flocks of the common Bluebird in Concho County.

249. *Sialia arctica*. MOUNTAIN BLUEBIRD. — Rare until the fall of 1886, when it appeared in immense flocks, and was very unwary, feeding with Cedarbirds and other species on the numerous wild berries in October and November. Some of the males were nearly ultramarine; others in the same flock were various shades of blue. None seen since January 10, 1887.

ADDENDA. — 250. *Rallus elegans*. KING RAIL. — One seen in South Concho, in the spring of 1886, by Mr. Cope, who tried to catch it with a dog.

251. *Pandion haliaëtus carolinensis*. OSPREY. — Several pairs breed on South Brady, according to Mr. Cope.

252. *Chordeiles virginianus henryi*. WESTERN NIGHTHAWK. — Rare on the Plains; probably breeds.

253. *Spizella monticola ochracea*. WESTERN TREE SPARROW.—Common in small flocks, winter of 1884-85.

CORRECTION.—On page 183, line 16 from bottom, for "about 240" read 253.

ADDITIONS TO THE AVI-FAUNA OF BAYOU SARA, LA.

BY CHARLES WICKLIFFE BECKHAM.

IN the 'Bulletin of the Nuttall Ornithological Club' for July, 1882, I gave an annotated list of the birds of Bayou Sara, Louisiana, the result of five days' work during the month of April of that year. Eighty-six species were enumerated. Since then I have had an opportunity of making further observations at the same place; extending over a much longer period, from April 1 to April 28, and am able to add twenty-seven species to the fauna as heretofore given.

The weather during the period mentioned was exceptionally dry, both for the season and the locality, which fact doubtless

had its effect upon the water birds, as but few were seen, but nearly all the species of land birds noted were represented by large numbers of individuals. At the date of my arrival vegetation was very far advanced, and at the stage which ordinarily prevails in the neighborhood of Washington about the middle of May.

A great deal of time was spent collecting in the densely wooded ravines alluded to further on, localities almost entirely neglected during my former visit. It was here that Swainson's Warbler most abounded, and the Hooded was always to be seen and heard in the same haunts; the male leisurely skipping about the branches at a distance of ten or twenty feet from the ground, singing in a languid sort of way, while the sharp *tsip* of the less gaudily attired female proceeded from the canes and scant undergrowth near the ground. On April 17 I found an empty nest, just finished, two feet from the ground, in a clump of small canes in one of these ravines, attached to one of the canes. On the 24th the female was seen on the nest, which then contained four perfectly fresh eggs. These birds were also very abundant in the swamp, where I once heard four singing at the same time.

The Mockingbird and Brown Thrasher were fully as abundant as in 1882; the former being found in the usual open places, near dwellings, in gardens, etc., and great numbers of them were nesting in the Cherokee rose bushes along Alexander's Creek. Like most of his tribe, the Mockingbird readily adapts himself to his environment in the matter of nest-building, and finding cotton-wool the most abundant and accessible material suitable for his purposes he uses a great deal of it. In all the nests examined (at least a dozen) the 'great staple' was the principal constituent. The Thrashers I found in every sort of place visited: building their nests in the crepe myrtles and rose bushes about the house, and again down in the darkest and most dismal places in the swamp.

The Catbird did not put in his appearance until the 18th. Although abundant here, he is a bird of very retiring habits, and exclusively a denizen of the woods and dense thickets, so that but few of the natives know of his presence at all, while in most northern and eastern localities he is as familiar a bird as the Robin or House Wren. However, the Wood Thrush, which is very common, makes an agreeable substitute, coming about the

dwellings with the fearless confidence of the Chipping Sparrow, and by his unexpected sociability atoning for the Catbird's shortcomings in this respect. They were first seen on April 4.

Bluebirds were not numerous, but the two or three pairs seen were evidently nesting. The Gnatcatchers and Blue Yellow-backed Warblers were particularly abundant and voluble; the former always going in pairs. Carolina Chickadees were found every day, and I saw several pairs of adult birds conducting their noisy broods through the woods in search of food. Their active relatives, the Tufted Titmice, were very common and found in all sorts of places, almost equaling in this respect the ubiquitous Carolina Wren, a bird probably exceeding in numbers any other summer resident here, and which finds itself at home anywhere, nesting indifferently in the stable, under the piazza, or in an old stump down in the swamp. But wherever he may be, he makes no secret of his whereabouts, for hill and dale and swamp and garden, all resound from dawn to twilight with the full-toned, tireless songs of this Orphean prodigy. I say songs, for the Carolina Wren is no one-tuned musical bore, but possesses much of the vocal versatility of his more favored rival the Mockingbird. They pair quite early here, for towards the last of April I saw many young birds flying about accompanied by the parents.

I saw but three or four Black-and-white Warblers, but was fortunate enough to find a nest on the 23d, containing four partly incubated eggs. It was on the ground on a densely wooded hillside, loosely constructed of dead leaves, etc., and was roofed over so as to be completely sheltered from the rain. The female did not leave her nest until I was within two or three feet of her, when she flew to the ground feigning lameness, but this old and pathetic subterfuge had just the opposite effect it was intended to have. The nest was admirably concealed and would never have been found had not the bird itself indicated its location.

The Yellow Warbler was often seen in the tree tops along the creek bottom, and the Redstart was generally found in the same places but always among the lower branches. The Pine Warbler, which was not uncommon in 1882, was not seen at all, nor was the Sycamore Warbler met with; and but one Blackburnian was observed, a male taken on the 20th.

Golden-crowned Thrushes arrived on the 24th and soon became common in their usual haunts, which were frequented also by

the Kentucky Warbler, one of the most abundant birds here. The Maryland Yellow-throat and Yellow-breasted Chat became very numerous towards the last of the month, particularly in open places near the edges of the swamp, localities I was surprised to find much affected by the White-throated Sparrow, which was abundant up to the date of my departure.

The Red-eyed and White-eyed Vireos were found in abundance, the latter much the more numerous of the two, while the Warbling Vireo was seen but once—in a shade tree in Bayou Sara. The Purple Martin was abundant in town but was seen nowhere else. The Cedarbird was several times observed in small flocks. It is said that none are seen here in summer, but in fall and early spring it is very abundant and great numbers of them are killed for the table.

The Rough-winged Swallows, which arrived in March, were present in force, and were breeding in holes in the banks along Alexander's Creek, where the Kingfishers were also nesting. A nest containing young Kingfishers was found on the 20th. The Summer Tanagers arrived on the 12th in full song and immediately became common. I found them at home in the swamp as well as on the high ground.

The Savanna Sparrow, Indigo Bunting, and Chewink were rather common, but Bachman's Finch, though diligently searched for, was not seen at all. Two specimens of this rare bird were taken here in 1882. The Nonpareil is a scarce bird here, as but two were seen during my stay: a male and female on the 23d. The Swamp Sparrow was sparingly represented among the transients.

The Cardinal Grosbeak was breeding abundantly everywhere, and the Red-winged Blackbirds, preferring upland ponds to other places, were paired and beginning to build. A few Meadow Larks and Baltimore Orioles were seen, and the Orchard Orioles were quite abundant, the yellow males considerably exceeding in numbers those in chestnut and black.

In the former paper the following note concerning the Grackle found here is given: "*Quiscalus purpureus*. Purple Grackle.—A common Grackle about the river and bayou at Bayou Sara is referred to this form, as the one found forty or fifty miles down the river is, according to Dr. Langdon, the Purple, and not the Bronzed Grackle." This supposition turns out to be erroneous. No spec-

imens were shot in 1882, but this time I was fortunate enough to obtain one, which proves to be typical *Quiscalus quiscula aeneus*. They appeared in the neighborhood of Bayou Sara during the preceding winter in enormous flocks and did a great deal of damage to the growing crops. They destroyed five acres of corn for Mr. James P. Bowman, a planter, near Bayou Sara, pulling the young sprouts up by the roots. Mr. Bowman poisoned several thousand of them with arsenic, but unfortunately a good many Carolina Doves were killed along with the Grackles.

The Blue Jays were exceedingly abundant, and the customary state of warfare prevailed between these rowdy freebooters and the rest of the feathered tribe. Kingbirds, Great-crested Flycatchers, and Woodpeckers were about equally represented; and their respective dates of arrival being April 3, 7, and 6. Acadian Flycatchers, first noted on the 13th, were occasionally seen and heard in dense woodland. Ruby-throated Hummingbirds and Chimney Swifts were abundant. The note of Chuck-will's-widow was first heard on the evening of April 11; the birds soon became very common, and as soon as twilight came on were to be heard on all sides. They would generally cease singing before eight o'clock, and occasionally one would be heard in the morning at daybreak. A few Nighthawks were seen, and one was shot from a small pine tree in an open place. It permitted me to approach within fifteen feet.

Among the Woodpeckers, besides *Picus villosus*, elsewhere noted, the Downy, Red-bellied, and Red-headed were well represented, but only three or four Flickers were observed. The Yellow-billed Cuckoos arrived on the 18th and were very abundant.

Judge Lawrason, who lives in the country near Bayou Sara, informed me that as late as 1875 he found the Carolina Parakeet every year at his place, but since that date he has neither seen nor heard of any in this locality.

A great many Vultures and Carrion Crows were seen, the latter being particularly abundant.

The only water birds observed, other than those elsewhere mentioned, were Wilson's Snipe, Solitary Sandpiper, Spotted Sandpiper, Little Green Heron, and Coot. A pair of the latter were seen on a large upland pond, considerably overgrown with water-lillies, etc., and a negro living near by asserts that they breed there.

87. *Ajaja ajaja*. ROSEATE SPOONBILL.—Mr. George Bains, of Waverly Plantation, shot one of these birds several years ago, feeding along the edge of a pond near his house, and Judge Lawrason informed me that it breeds sparingly in the swamp.

88. *Elanoides forficatus*. SWALLOW-TAILED KITE.—I did not see this bird, but several trustworthy persons informed me that it was not uncommon in the swamp.

89. *Buteo harlani*. HARLAN'S HAWK.—Not seen by me. Audubon states that he shot the type specimen of this rare Hawk at Bayou Sara.

90. *Dryobates villosus*. HAIRY WOODPECKER.—A common bird here. On April 11 I shot a fully fledged young female. The only difference noted between it and the adult was in the smaller size of the latter, particularly the bill.

91. *Empidonax flaviventris*. YELLOW-BELLIED FLYCATCHER. — Not seen until the 26th when two were taken and several more observed. Apparently preferring open places to the woodland.

92. *Ammodramus savannarum passerinus*. GRASSHOPPER SPARROW. — First seen on the 9th; common afterwards.

93. *Spizella socialis*. CHIPPING SPARROW. — Common in suitable places. Not seen in the woods.

94. *Spizella pusilla*. FIELD SPARROW.—Abundant and breeding.

95. *Passer domesticus*. EUROPEAN HOUSE SPARROW.—These pests have recently gained a foothold in Bayou Sara, but are not very numerous. None were seen in the country.

96. *Spiza americana*. DICKCISSEL.—But one individual of this handsome species was seen, a male, which was shot on the 20th, in a meadow in company with Grasshopper Sparrows.

97. *Piranga erythromelas*. SCARLET TANAGER.—While here in 1882 I shot a female of this species which is still in my collection, but in writing up my notes of that trip the capture was overlooked. None were seen during my last visit.

98. *Petrochelidon lunifrons*. CLIFF SWALLOW.—Noted but once, on April 23, when several were seen flying about a large pond in company with *T. bicolor*, *C. erythrogastra*, and *Stelgidopteryx serripennis*.

99. *Chelidon erythrogastra*. BARN SWALLOW.—Several times seen but apparently not common.

100. *Tachycineta bicolor*. TREE SWALLOW.—First observed perched on some telegraph wires on the 9th, and again seen in considerable numbers near the same place on April 23.

101. *Vireo flavifrons*. YELLOW-THROATED VIREO.—This Vireo was not observed until April 9, when two were heard singing. Several times seen afterwards, but never in the dense woods; always in trees about open places.

102. *Protonotaria citrea*. PROTHONOTARY WARBLER.—The first individual of this species was seen and captured on April 6, in a willow tree near a pond in the creek bottom, but they did not appear in force until the 12th, on which day I shot five, and saw at least twenty more. They

continued to be common in suitable places up to the time of my departure, and a great many pairs were undoubtedly breeding. I found two nests just completed, one on the 16th and the other on the 25th, neither of which contained eggs. They were placed in old Woodpecker holes, in hollow snags about fifteen feet from the ground. Although a number of the birds were seen in the swamp, the most of them were found about the willow trees along Alexander's Creek, a locality, however, only about one half of a mile from the swamp. They were usually quite tame and unsuspecting. Five or six of the twenty-five specimens taken had the feathers of the forehead stained and gummed up with some sticky, resinous substance that could not be washed off.

103. *Helmintherus vermivorus*. WORM-EATING WARBLER.—A rather common bird, inhabiting mostly the same places as *H. swainsoni*, that is, densely wooded ravines. First seen on April 11. Towards the end of the month I found several pairs which were evidently mated and nesting, but no nests were found.

104. *Helinaia swainsoni*. SWAINSON'S WARBLER.—Although I only spent five days at this place in 1882, it is surprising, in view of facts cited below, that Swainson's Warbler was not met with. On April 8, while standing near the edge of a dense tangle of cane and 'black jack' (a sort of vine), I heard a bird-note entirely new to me, but which reminded me very much of the song of the Large-billed Water-thrush. It was impossible to get at the bird, and I did not again hear the note until three days afterward. I was sitting on the ground in a densely wooded ravine, where the only sounds to be heard proceeded from the usual horde of hungry mosquitoes, singing about my head, now and then mingled with the languid ditty of a Hooded Warbler lazily foraging for insects in the branches above, when a small, dark looking bird whizzed by me like an arrow and disappeared in a small clump of canes and bushes growing in the bottom of the ravine. Just as I was about getting up to look for it the same Seiurine song, heard before, burst forth, apparently only a few feet distant; then it dawned upon me that I was in the presence of the much sought for *Helinaia swainsoni*. The song was uttered at intervals of about half a minute, the bird all the time remaining perfectly motionless, and for fully ten minutes I sat in the same place eagerly scanning everything in the direction of the sound, which apparently changed with every utterance, afraid to move lest the slightest noise or motion should drive off the puzzling ventriloquist. After having finished the performance to his apparent satisfaction, he flew from a twig directly in front of me to the ground, when the usual tragedy took place. Hardly had I picked the bird up before two more appeared upon the scene; two belligerent males fighting and chasing each other about. One of these was also secured, and two or three more were seen or heard that day in similar localities.

The bird is undoubtedly common here, for altogether I obtained twenty specimens during my stay; on one day taking as many as four. It is, however, exceedingly difficult to get them, but, as Mr. Brewster in his interesting account of the species, says, "once seen it is yours"—if you can

only see it, for, like the Whip-poor-will, it is oftener heard than seen. On at least a dozen occasions I have stood within twenty or thirty feet of a male singing in the manner above described, and been unable to see him, until, tired of fruitless searching, I would make a noise, when off he would dart into a brake where it would be a waste of time and energy to follow.

Four or five times I saw the bird on the ground, *walking* about in that deliberate manner peculiar to the Golden-crowned and Water Thrushes, and twice I have observed the male singing on the ground, pausing every eight or ten steps in his search for insects to throw back his head and pour forth his curious melody, a habit, so far as I have read, not noted by previous observers.

Although occasionally found along the edges of the swamp, the favorite haunts were the dark, wooded ravines, making off from Alexander's Creek and other water courses. Along the bottoms of these ravines cane is always to be found growing, and the bare ground in these small brakes forms the favorite feeding places of the bird. Although no nests were found, they were evidently paired and breeding before I left.

105. *Helminthophila peregrina*. TENNESSEE WARBLER.—Only one individual was recognized, a male shot out of a party of four or five Warblers skipping about the top of a willow in the creek bottom on April 25.

106. *Dendroica coronata*. MYRTLE WARBLER.—During the first three or four days of my stay I found the Myrtle Warbler quite common in parties of from four to eight, but none were seen after April 7. All those observed were moulting.

107. *Dendroica cærulea*. CÆRULEAN WARBLER.—But one individual of this species was seen, a handsome male in full spring plumage, which was shot from the top of a sycamore on April 20.

108. *Dendroica pennsylvanica*. CHESNUT-SIDED WARBLER.—This Warbler seems also to be a rare bird here, as but one was observed, a male shot in the creek bottom, April 22.

109. *Seiurus noveboracensis*. WATER THRUSH.—One of these birds was taken in the swamp on April 26. It was in company with another of the same species. No others were noted.

110. *Troglodytes aëdon*. HOUSE WREN.—Evidently a rare bird here, as I saw it but once, April 20, when one of a pair was shot in a clump of briars.

111. *Regulus calendula*. RUBY-CROWNED KINGLET.—This Kinglet was quite abundant early in April, and the males were in full song, but they soon left for the North. *R. satrapa* was not seen at all.

112. *Turdus aliciaë*. GRAY-CHEEKED THRUSH.—Not seen until the 22d, after which date they became rather common, but I never saw more than one in the same place.

113. *Turdus aoniaschkæ pallasi*. HERMIT THRUSH.—Rather common in suitable places. Doubtless a winter resident here.

THE SIGNIFICANCE OF CERTAIN PHASES IN THE GENUS *HELMINTHOPHILA*.

BY SPENCER TROTTER, M. D.

THE Mniotiltine genus *Helminthophila* has of late years presented some very interesting and curious features in the relations of certain of its species to one another and to several remarkable forms which have come to light in the past decade. In fact, in its earlier known history as a genus two forms appeared, one of which has only lately turned up again within our limits, while the other, if indeed it belonged with the genus, has long been relegated to the list of 'lost' or 'doubtful' species, a veritable myth, never having been seen since its first discovery, so that the genus has always figured in a rather eccentric light.

The group is highly characteristic of the Nearctic Region, consisting of eight well defined species, which pass under the general name of Swamp Warblers. Nowhere what might be called abundant birds, the *Helminthophilæ* still enjoy an extensive range over the continent, and are essentially migratory, as the insect nature of their food demands. The species fall into two sub-groups, as regards their general form and pattern of color, and this corresponds pretty closely with the extent of their distribution.

Celata, *ruficapilla*, *peregrina*, *luciae*, and *virginiae* form one section, small birds of a more or less uniform and quiet coloration, the two former being the most widely distributed species of the genus.

The Orange-crowned Warbler, *celata*, with its western variety *lutescens*, ranges over the entire continent from ocean to ocean, but is comparatively rare in the Eastern Province, being seldom met with. It winters southward, beyond United States limits into Mexico, and reaches high latitudes in the Northwest. The Nashville Warbler, *ruficapilla*, on the other hand, with as wide a range as *celata*, is far more abundant in the Eastern Province than in the West, and extends its migrations northward to the Arctic Basin on the east. The Tennessee Warbler, *peregrina*, is chiefly eastern in its distribution, breeding northward into high latitudes.

Virginica and *lucica* are restricted in their ranges, being characteristic of the Colorado Valley and Southern Rocky Mountain region.

The other section comprises *bachmani*, *chrysoptera*, *pinus*, and their curious allies, *lawrencei* and *leucobronchialis*; birds of striking coloration and of much more restricted ranges than the three plainer colored species of the former sub-group. *Bachmani* is exceedingly rare, having been taken but a few times in the Southern States. The Blue Golden-winged Warbler, *chrysoptera*, and the Blue-winged Yellow Warbler, *pinus*, are exclusively birds of the Eastern Province, the former ranging into Canada, though rarer in the Northern States, the latter scarcely if ever going beyond Massachusetts and Minnesota. Both winter south of our limits.

I have taken the liberty of thus hastily reviewing the genus for the purpose of bringing together as nearly as possible our present knowledge of the distribution of the several species. The history of the two forms *lawrencei* and *leucobronchialis* is already so well known to ornithologists that it need not be reiterated here, except to recall the very general belief of their hybrid nature.

The question naturally arises in the minds of most persons who have given any thought to the subject, What does the occurrence of such peculiar forms, taken in conjunction with other facts, signify? We are stepping into a somewhat uncertain region when we attempt to speculate on a subject of this character, but I believe that the only way in which we may hope to throw any light whatever upon such a subject is from an evolutionary standpoint.

The rise and decay of genera and species in the struggle for existence; the pressure of dominant groups upon smaller and less adapted races; action and reaction through environment;—these are the factors involved, and that have given rise to many apparently inexplicable phenomena.

A dominant group is characterized by the abundance of its forms, both in species and individuals, over wide areas, this being the index of its vigor and consequent ability to maintain itself against competitors, and its adaptability to varying conditions of environment. Rarity in species and individuals is indicative of degeneracy, the expression of the inability of the group to hold its own.

Hybridism under nature is a further expression of decay, the result of a growing rarity in the individuals of a species.

Of course a hybrid may be purely accidental, as I believe the case to have been with the cross between the Barn and the Cliff Swallow which I described some years ago, the result of a *mesalliance* between two individuals during the spring flights when numbers of both species are 'hawking' in the air together prior to nesting. But when we see crossing repeatedly performed the question of accident must be set aside and another means of solution sought.

Let us see how these principles will apply to the genus *Helminthophila*. Here we have a group of eight species, as has been cited above, none of which are as a rule very abundant, especially when compared with other birds, *e. g.*, certain species of *Dendroica*.

Recalling the distribution of the species, we find that each has a more or less definite area, but their habitats considerably overlap one another. That of the two sub-divisions noted, *celata*, *ruficapilla*, and *peregrina* are the most widely distributed, while *chrysoptera*, *pinus*, and their allies are much more restricted, and it is in this latter section that we find what is to my mind an evidence of decay. Strictly insectivorous, the *Helminthophilæ* have come in direct competition with other insectivorous forms, and among them the closely allied and dominant genus *Dendroica*, with its thirty odd well defined species, whose habits and nature closely resemble the Swamp Warblers in many ways. The pressure exerted by *Dendroica* would be very much greater in the East than in the West, owing to the greater preponderance of individuals and species in the former area; consequently the more restricted eastern species of *Helminthophila* would feel this competition keenly.

Many of the *Dendroicæ* pursue and capture their food in much the same manner as the *Helminthophilæ*, and in similar localities; more than this, the majority are expert fly-catchers, taking mature insects on the wing with much greater readiness and persistency than do the species of Swamp Warblers. A glance at the bills of the two will show which is the best adapted for diversified work.

And what has been the upshot of all this? Simply that these restricted species of *Helminthophila* are succumbing to more wide-spread and better adapted forms, and their decrease in num-

bers, though not directly apparent in all the species, is expressed by the curious phenomena which have lately come under our notice. *Bachmani* is exceedingly rare, for aught we know on the verge of extinction, though it still exists in favorable localities in the vast swamps of the Southern States.

The mythical *carbonata* might have been the last of another form,—who can tell? Audubon gave it a place in this genus.

Chrysoptera and *pinus* yet remain fairly abundant but forced apparently to cross with each other, and the resulting forms, *lawrencei* and *leucobronchialis*, without doubt recross with the parent species.* Further, we find evidence that *pinus* has undoubtedly gone over to the strange genus *Oporornis* and contracted an alliance there.†

These are the facts, and we are left to draw our own conclusions in the best way possible. Genera and species rise up, increase and become dominant only to break down again under the pressure of other and better adapted forms. What the other genera of the Mniotiltidæ may have been in the past we can only surmise.

Those that now possess but one or two species may, and very likely have, possessed more and been dominant in their time. A change in habit under pressure and consequent structural modification would be of immense advantage, and finally result in one or two well adapted species forming a well defined genus. Such may have been the history of *Mniotilta*, *Protonotaria*, and others, and such may be the future of these *Helminthophila* who now, as it seems to me, show unmistakable evidence of break-down after a long and severe struggle against better adapted forms.

This or ultimate extinction are the only alternatives.

* Brewster, Wm. Bull. Nutt. Ornith. Club, Vol. VI, Oct. 1881, p. 218.

† Langdon, Frank W. Bull. Nutt. Ornith. Club, Vol V, Oct. 1880, p. 208, plate. iv.

THE BIRDS OF THE WEST INDIES, INCLUDING
THE BAHAMA ISLANDS, THE GREATER AND
THE LESSER ANTILLES, EXCEPTING
THE ISLANDS OF TOBAGO
AND TRINIDAD.

BY CHARLES B. CORY.

[Continued from page 232.]

FAMILY SCOLOPACIDÆ.

GENUS *Gallinago* LEACH,

Gallinago LEACH, Syst. Cat. Brit. Mam. & Bds. p. 31, 1816.

✓ *Gallinago delicata* (ORD).

Scolopax delicata ORD, Wils. Orn. ix, 1825, p. ccxviii.

Scolopax wilsoni SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 587 (St. Bartholomew); *ib.* p. 601 (Porto Rico).

Scolopax gallinago D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 231 (1840).

Gallinago wilsoni GOSSE. Bds. Jam. p. 353 (1847).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas); *ib.* BREWER, p. 308 (1860) (Cuba).—GUNDL. J. f. O. 1862, p. 85 (Cuba).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica).—GUNDL. Repert. Fisco-Nat. Cuba, I, p. 353 (1866); *ib.* J. f. O. 1875, p. 321 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 197 (1878) (St. Vincent); *ib.* p. 238 (Antigua); *ib.* p. 242 (Barbuda).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 368 (1878) (Porto Rico).—CORY, Bds. Bahama I. p. 156 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, List Bds. W. I. p. 26 (1885).

Gallinago wilsonii A. & E. NEWTON, Ibis, 1859, p. 258 (St. Croix).—SCL. P. Z. S. 1861, p. 80 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).

Gallinago media wilsoni WELLS, List Bds. Grenada, p. 8 (1886).

Bahamas and Antilles during migrations.

✓ *Philohela minor* (GMEL.).

Scolopax minor A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).

Rusticola minor GOSSE, Bds. Jam. p. 354 (1847) (Hill).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 68 (Jamaica).

Recorded by Gosse and others from Jamaica. The bird might occasionally wander to Cuba, and possibly Jamaica, as it is not uncommon in some parts of Florida in winter.

GENUS *Macrorhamphus* LEACH.

Macrorhamphus "LEACH, Cat. Brit. Birds, 1816."

✓ *Macrorhamphus griseus* (GMEL.).

Scolopax grisea GMEL. Syst. Nat. I, p. 568 (1788).

Limnodramus griseus LEMB. Aves Cuba, p. 91 (1850).

Macrorhamphus griseus GUNDL. J. f. O. 1862, p. 85 (Cuba); *ib.* Repert.

Fisico-Nat. Cuba, I, p. 353 (1866); *ib.*, J. f. O. 1875, p. 322 (Cuba).

Macrorhamphus griseus CORY, Bds. Bahama I. p. 157 (1880). — A. & E.

NEWTON, Handb. Jamaica, p. 116 (1881). — CORY, List Bds. W. I. p. 26 (1885).

Recorded from Bahamas, Cuba, and Jamaica.

✓ *Macrorhamphus scolopaceus* (SAY).

Limosa scolopacea SAY, Long's Exp. 1823, p. 170.

Macrorhamphus scolopaceus ALBRECHT, J. f. O. 1861, p. 213 (Cuba); *ib.*

GUNDL. 1862, p. 85 (Cuba); *ib.* Repert. Fisico-Nat. Cuba, I, p. 354 (1866), *ib.* J. f. O. 1875, p. 322 (Cuba).

Macrorhamphus scolopaceus CORY, List Bds. W. I. p. 26 (1885).

Cuba and Antilles during migrations.

GENUS *Micropalama* BAIRD.

Micropalama BAIRD, Birds N. Am. p. 726, 1858.

✓ *Micropalama himantopus* (BONAP.).

Tringa himantopus BP. Ann. Lyc. N. Y. II, p. 157 (1826). — BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

Totanus himantopus LEMB. Aves Cuba, p. 95 (1850). — MARCH, Pr. Acad.

Nat. Sci. Phila. 1864, p. 67 (Jamaica). — GUNDL. Repert. Fisico-Nat. Cuba, I, p. 356 (1866). — A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).

Ereunetes himantopus SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 587 (St. Bartholomew); *ib.* p. 602 (Porto Rico).

Micropalama himantopus MOORE, Pr. Bost. Soc. Nat. Hist. XIX, p. 241 (1877) (Bahamas). — CORY, List Bds. W. I. p. 26 (1885).

Micropalama himantopus GUNDL. J. f. O. 1875, p. 326 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 373 (1878). — CORY, Revised List Bds.

W. I. p. 26 (1885). — WELLS, List Bds. Grenada, p. 8 (1886).

Found throughout the Antilles.

GENUS *Ereunetes* ILLIG.

Ereunetes ILLIGER, Prodomus, p. 262, 1811.

✓
Ereunetes pusillus (LINN.).

Tringa pusilla LINN. Syst. Nat. I, p. 252 (1766).

Pelidna pusilla GOSSE, Bds. Jam. p. 348 (1847)?

Hemipalama semipalmata LEMB. Aves Cuba, p. 96 (1850). — BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

Hemipalama minor LEMB. Aves Cuba, p. 97 (1850). — BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

Tringa semipalmata BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas).

Ereunetes pusillus CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 195 (Jamaica). — GUNDL. Repert. Físico-Nat. Cuba, I, p. 356 (1866); *ib.* J. f. O. 1875, p. 327 (Cuba); Anal. Soc. Esp. Hist. Nat. VII, p. 374 (1878) (Porto Rico). — SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 587 (St. Bartholomew); *ib.* p. 602 (Porto Rico). — CORY, Bds. Bahama I. p. 157 (1880). — A. & E. NEWTON, Handb. Jamaica, p. 116 (1881). — CORY, List Bds. W. I. p. 26 (1885). — WELLS, List Bds. Grenada, p. 8 (1886). — CORY, Ibis, 1886, p. 502 (Grand Cayman).

Ereunetes petrificatus MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 68 (Jamaica). — LAWR. Pr. U. S. Nat. Mus. I, p. 488 (1878) (Dominica); *ib.* p. 238 (Antigua); *ib.* p. 242 (Barbuda); *ib.* p. 488 (Guadeloupe).

Throughout the Antilles during migrations.

Ereunetes occidentalis LAWR., if it be considered different from the preceding species, must be given a place in the West India Avifauna.

GENUS *Tringa* LINN.

Tringa LINNÆUS, Syst. Nat. I, 10th ed. p. 148, 1758; *ib.* 12th ed. p. 247, 1766.

✓
Tringa minutilla VIEILL.

Tringa minutilla VIEILL. Nouv. Dict. XXXIV, p. 452 (1819). — LAWR. Pr. U. S. Nat. Mus. I, p. 197 (1878) (St. Vincent). — ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia). — CORY, Bds. Bahama I. p. 158 (1880). — A. & E. NEWTON, Handb. Jamaica, p. 116 (1881). — CORY, List Bds. W. I. p. 26 (1885); *ib.* Ibis, 1886, p. 502 (Grand Cayman).

- Tringa temminckii* D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 240 (1840).
- Pelidna pusilla* GOSSE, Bds. Jam. p. 348 (1847)?—GUNDL. J. f. O. 1862, p. 87 (Cuba).
- Actodromas wilsonii* A. & E. NEWTON, Ibis, 1859, p. 258 (St. Croix).
- Tringa wilsoni* BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas).—SCL. P. Z. S. 1861, p. 80 (Jamaica).
- Tringa pusilla* BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).
- Tringa wilsonii* ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).
- Actodromas minutilla* MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 357 (1866); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 376 (1878) (Porto Rico).

Winter visitant to the Bahamas and Antilles.

✓ *Tringa maculata* VIEILL.

- Tringa maculata* VIEILL. Nouv. Dict. XXXIV, p. 456 (1819).—A. & E. NEWTON, Ibis, 1859, p. 258 (St. Croix).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 69 (1867) (Bahamas); *ib.* MOORE, XIX, p. 241 (1877) (Bahamas).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 587 (St. Bartholomew).—LAWR. Pr. U. S. Nat. Mus. I, p. 461 (1878) (Guadeloupe).—CORY, Bds. Bahama I. p. 159 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, List Bds. W. I. p. 26 (1885); *ib.* Ibis, 1886, p. 502 (Grand Cayman).
- Tringa pectoralis* LEMB. Aves Cuba, p. 98 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 602 (Porto Rico).
- Pelidna pectoralis* GUNDL. J. f. O. 1862, p. 87 (Cuba).
- Actodromas maculata* GUNDL. Repert. Fisico-Nat. Cuba, I, p. 356 (1866); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 375 (1878) (Porto Rico).—WELLS, List Bds. Grenada, p. 8 (1886).
- Actodromas maculatus* GUNDL. J. f. O. 1875, p. 328 (Cuba).
- Tringa maculosa* MOORE, Pr. Bost. Soc. Nat. Hist. XIX, p. 241 (1877) (Bahamas).

Antilles in winter.

✓ *Tringa fuscicollis* VIEILL.

- Tringa fuscicollis* VIEILL. Nouv. Dict. XXXIV, p. 461 (1819).—SCL. P. Z. S. 1876, p. 14 (Santa Lucia).—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, List Bds. W. I. p. 26 (1885).
- Tringa schinzii* LEMB. Aves Cuba, p. 98 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).
- Pelidna schinzii* GUNDL. J. f. O. 1856, p. 421 (Cuba); *ib.* 1862, p. 87 (Cuba).

- Tringa bonapartii* SCL. P. Z. S. 1861, pp. 70, 80 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—MOORE, Pr. Bost. Soc. Nat. Hist. XIX, p. 241 (1877) (Bahamas).
- Actodromas bonapartii* GUNDL. Repert. Fisico-Nat. Cuba, I, p. 356 (1866); *ib.* J. f. O. 1875, p. 328 (Cuba).
- Tringa bonapartei* CORY, Bds. Bahama I. p. 159 (1880).

Antilles in winter.

Tringa canutus LINN.

- Tringa canutus* LINN. Syst. Nat. I, 10th ed. p. 149 (1758); *ib.* 12th ed. p. 251 (1766).—GOSSE, Bds. Jam. p. 354 (1847).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, Revised List Bds. W. I. p. 26 (1886).

Recorded from Jamaica.

Tringa ferruginea BRÜNN.

- Tringa ferruginea* BRÜNN. Orn. Bor. 1764, p. 53.—A. O. U. Check-list, N. Am. Bds. p. 152 (1886).
- Ancyloheilus subarquata* KAUP, Sk. Ent. Eur. Theirw. 1829, p. 50.
- Ancylochilus subarquatus* WELLS, List Bds. Grenada, p. 8 (1886).

Recorded from Grenada.

GENUS Calidris CUV.

- Calidris* CUVIER, Anat. Comp. V, 1805.

✓ **Calidris arenaria (LINN.).**

- Tringa arenaria* LINN. Syst. Nat. I, p. 251 (1766).
- Calidris arenaria* GOSSE, Bds. Jam. p. 354 (1847).—GUNDL. J. f. O. 1856, p. 422 (Cuba).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 357 (1866); *ib.* J. f. O. 1875, p. 329 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 197 (1878) (St. Vincent); *ib.* p. 461 (Guadeloupe).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 376 (1878) (Porto Rico).—CORY, Bds. Bahama I. p. 160 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, List. Bds. W. I. p. 26 (1885).
- Arenaria calidris* LEMB. Aves Cuba, p. 101 (1850).

Antilles in winter.

GENUS Limosa BRISS.

- Limosa* BRISSON, Orn. 1760.

✓ *Limosa fedoa* (LINN.).

Scolopax fedoa LINN. Syst. Nat. I, p. 244 (1766).

Limosa fedoa LEMB. Aves Cuba, p. 90 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—GUNDL. J. f. O. 1862, p. 84 (Cuba); *ib.* Repert. Fisico-Nat. Cuba. I, p. 353 (1866); *ib.* J. f. O. 1875, p. 320 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 368 (1878) (Porto Rico).—WELLS, List Bds. Gredada, p. 8 (1886).

Recorded from the Greater Antilles.

✓ *Limosa hæmastica* (LINN.).

Scolopax hæmastica LINN. Syst. Nat. I, 10th ed. p. 147 (1758).

Limosa hudsonica LEMB. Aves Cuba, Suppl. (1850).—GUNDL. J. f. O. 1862, p. 84 (Cuba); *ib.* Repert. Fisico-Nat. Cuba, I, p. 353 (1866); *ib.* J. f. O. 1875, p. 320 (Cuba).

Limosa hæmastica CORY, List Bds. W. I. p. 26 (1885).

Recorded from Cuba.

GENUS *Symphemia* RAF.

Symphemia RAFINESQUE, Jour. de Phys. 1819.

✓ *Symphemia semipalmata* (GMEL.).

Scolopax semipalmata GMEL. Syst. Nat. I, p. 959 (1788).

Totanus semipalmatus LEMB. Aves Cuba, p. 92 (1850).—CORY, Bds. Bahama I, p. 160 (1880).

Catoptrophorus semipalmatus GOSSE, Bds. Jam. p. 354 (1847).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

Symphemia semipalmata BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 122 (1859) (Bahamas).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 354 (1866); *ib.* J. f. O. 1875, p. 322 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 238 (1878) (Antigua); *ib.* p. 242 (Barbuda).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 369 (1878) (Porto Rico).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, Revised List Bds. W. I. p. 27 (1886).—WELLS, List Bds. Grenada, p. 8 (1886).

Catoptrophorus speculiferus BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

Symphemia semipalmatus CORY, List Bds. W. I. p. 27 (1885).

Common in the Bahamas and Antilles.

GENUS *Totanus* BECHST.

Totanus BECHSTEIN, Orn. Taschenb. Deutschl. p. 282, 1803.

✓ *Totanus melanoleucus* (GMEL.).

Scolopax melanoleucus GMEL. Syst. Nat. I, p. 659 (1788).

Totanus melanoleucus GOSSE, Bds. Jam. p. 352 (1847).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 69 (1867) (Bahamas).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 588 (St. Bartholomew); *ib.* p. 602 (Porto Rico).—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880).—CORY, Bds. Bahama I. p. 161 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, List Bds. W. I. p. 27 (1885).—WELLS, List Bds. Grenada, p. 8 (1886).

Totanus vociferus LEMB. Aves Cuba, p. 93 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

Gambetta melanoleuca SCL. P. Z. S. 1861, p. 80 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 68 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 354 (1866); *ib.* J. f. O. 1875, p. 323 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 238 (1878) (Antigua).—GUNDL. Anal. Soc. Esp. Hist. VII, p. 370 (1878) (Porto Rico).

Glottis melanoleuca GUNDL. J. f. O. 1862, p. 85 (Cuba).

Records from Bahamas, Cuba, Jamaica, Porto Rico, St. Bartholomew, Antigua, and Grenada.

✓ *Totanus flavipes* (GMEL.).

Scolopax flavipes GMEL. Syst. Nat. I, p. 659 (1788).

Totanus flavipes D'ORB. in La Sagra's Hist. Nat. Cuba. Ois. p. 234 (1840).—GOSSE, Bds. Jam. p. 351 (1847).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 69 (1867) (Bahamas).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 588 (St. Bartholomew); *ib.* p. 602 (Porto Rico).—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia).—CORY, Bds. Bahama I. p. 162 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, List Bds. W. I. p. 27 (1885).—WELLS, List Bds. Grenada, p. 8, 1886.—CORY, *Ibis*, 1886, p. 502 (Grand Cayman).

Gambetta flavipes MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 68 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 354 (1866).—LAWR. Ann. Lyc. N. Y. VIII, p. 100 (1867) (Sombbrero); *ib.* Pr. U. S. Nat. Mus. I, p. 197 (1878) (St. Vincent); *ib.* p. 242 (Barbuda).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 371 (1878) (Porto Rico).

Antilles in Winter.

✓
Totanus solitarius (WILS.).

Tringa solitaria WILS. Am. Orn. VII, p. 53 (1813).

Totanus solitarius D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 238 (1840).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 587 (St. Bartholomew); *ib.* p. 602 (Porto Rico).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).

Totanus chloropygius GOSSE, Bds. Jam. p. 350 (1847).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—GUNDL. J. f. O. 1862, p. 86 (Cuba).

Phycophilus solitarius SCL. P. Z. S. 1861, p. 80 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 355 (1886); *ib.* J. f. O. 1874, p. 313 (Porto Rico); *ib.* 1875, p. 324 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 372 (1878) (Porto Rico).—LAWR. Pr. U. S. Nat. Mus. I, p. 238 (1878) (Antigua); *ib.* p. 242 (Barbuda); *ib.* p. 461 (Gaudeloupe).—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia).—CORY, List Bds. W. I. p. 27 (1885).

Records from Cuba, Jamaica, Porto Rico, Santa Lucia, Antigua, Barbuda, Gaudeloupe, and St. Bartholomew.

GENUS Actitis ILLIGER.

Actitis ILLIGER, Prodr. 1811, p. 262.

✓
Actitis macularia (LINN.).

Tringa macularia LINN. Syst. Nat. I, p. 249 (1766).—BRYANT, Pr. Bost. Soc. Nat. Hist. X, p. 257 (1866) (Porto Rico).

Actitis macularius GOSSE, Bds. Jam. p. 349 (1847).

Totanus macularius LEMB. Aves Cuba, p. 94 (1850).

Tringoides macularia BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

Tringoides macularius SCL. P. Z. S. 1861, p. 80 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 355 (1866); *ib.* J. f. O. 1875, p. 325 (Cuba).—SCL. P. Z. S. 1872, p. 653 (Santa Lucia).—LAWR. Pr. U. S. Nat. Mus. I, p. 67 (1878) (Dominica); *ib.* p. 197 (St. Vincent); *ib.* p. 276 (Grenada); *ib.* p. 360 (Martinique).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 372 (1878) (Porto Rico).—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia).—LISTER, Ibis, 1880, p. 44 (St. Vincent).—CORY, Bds. Bahama I. p. 162 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 115 (1881).—CORY, Bull. Nutt. Orn. Club, VI, p. 154 (1881) (Haiti); *ib.* Bds. Haiti & San Domingo, p. 148 (1885); *ib.* List Bds. W. I. p. 27 (1885).—WELLS, List Bds. Grenada, p. 8 (1886).

Actitis macularia SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 587 (St. Bartholomew); *ib.* p. 602 (Porto Rico).

Antilles, common.

GENUS *Bartramia* LESS.

Bartramia LESSON, Traite d' Orn. p. 553, 1831.

✓ *Bartramia longicauda* (BECHST.).

Tringa longicauda BECHST. Vog. Nachtr. übers. Lath. Ind. Orn. p. 453 (1812).

Totanus longicauda D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 237 (1840).

Tringoides bartramius BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

Euligia bartramia GUNDL. J. f. O. 1862, p. 86 (Cuba).

Actiturus bartramius MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica)?

Actiturus longicaudus GUNDL. Repert. Fisico-Nat. Cuba, I, p. 355 (1866); *ib.* J. f. O. 1875, p. 326 (Cuba).

Actiturus longicaudatus GUNDL. J. f. O. 1881, p. 401 (Cuba).

Actiturus longicauda A. & E. NEWTON, Handb. Jamaica, p. 115 (1881).

Bartramia longicauda CORY, List Bds. W. I. p. 57 (1885).—WELLS, List Bds. Grenada, p. 8 (1886).

Records from Cuba, Jamaica, and Grenada. I have seen a specimen taken in the Bahama Islands.

GENUS *Tryngites* CAB.

Tryngites CABANIS, J. f. O. 1856, p. 418.

✓ *Tryngites subruficollis* (VIEILL.).

Tringa subruficollis VIEILL. Nouv. Dict. XXXIV, p. 465 (1819).

Tringa rufescens VIEILL. Nouv. Dict. XXXIX, p. 470 (1819).—LEMB. Aves Cuba, p. 99 (1850).—BREWER, Pr. Bost. Nat. Hist. VII, p. 308 (1860) (Cuba).

Tryngites rufescens GUNDL. Repert. Fisico-Nat. Cuba, I, p. 355 (1866); *ib.* J. f. O. 1875, p. 325 (Cuba).—CORY, List Bds. W. I. p. 27 (1885).

Accidental in Cuba.

GENUS *Numenius* LINN.

Numenius LINNÆUS, Syst. Nat. 1746.

✓ **Numenius hudsonicus LATH.**

- Numenius hudsonicus* LATH. Ind. Orn. II, p. 712 (1790).—LAWR. Ann. Lyc. N. Y. VIII, p. 100 (1867) (Sombrero); *ib.* Pr. U. S. Nat. Mus. I, p. 238 (1878) (Antigua); *ib.* p. 242 (Barbuda); *ib.* p. 277 (Grenada).—CORY, List Bds. W. I. p. 27 (1885).—WELLS, List Bds. Grenada, p. 8 (1886).
Numenius hudsonius GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 367 (1878) (Porto Rico).

Winter visitant to the Antilles.

Numenius borealis (FORST.).

- Scolopax borealis* FORST. Phil. Trans. LXII, p. 411 (1772).
Numenius borealis GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 367 (1878) (Porto Rico).—CORY, List Bds. W. I. p. 27 (1885).—WELLS, List Bds. Grenada, p. 8 (1886).

West Indies in winter; reported from Porto Rico and Grenada.

✓ **Numenius longirostris WILS.**

- Numenius longirostris* WILS. Am. Orn. VIII, p. 24 (1814).—DENNY, P. Z. S. 1847 p. 39 (Jamaica).—LEMB. Aves Cuba, p. 88 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 68 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 352 (1866); *ib.* J. f. O. 1875, p. 320 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 197 (1878) (St. Vincent).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, List Bds. W. I. p. 27 (1885).

Greater Antilles in winter.

FAMILY CICONIIDÆ.

GENUS **Tantalus LINN.**

- Tantalus* LINNÆUS, Syst. Nat. 10th ed. 1758.

Tantalus loculator LINN. ✓

- Tantalus loculator* LINN. Syst. Nat. I, p. 240 (1766).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 219 (1840).—DENNY, P. Z. S. 1847, p. 39 (Jamaica).—GUNDL. J. f. O. 1856, p. 348 (Cuba).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—

GUNDL. J. f. O. 1862, p. 83 (Cuba); *ib.* Repert. Fisico-Nat. Cuba, I, p. 351 (1866); *ib.* J. f. O. 1875, p. 313 (Cuba).—CORY, List Bds. W. I. p. 27 (1885).

Recorded from Cuba and Jamaica.

FAMILY IBIDIDÆ.

GENUS *Guara* REICH.

Guara REICHENBACH, Syst. Avium, 1852. p. xiv.

Guara alba (LINN.). ✓

Scolopax alba LINN. Syst. Nat. I, 10th ed. p. 145 (1758).

Ibis alba DENNY, P. Z. S. 1847, p. 39 (Jamaica).—LEMB. Aves Cuba, p. 86 (1850).

Endocimus albus BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 352 (1866); *ib.* J. f. O. 1875, p. 315 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 364 (1878) (Porto Rico).—CORY, Bds. Haiti & San Domingo, p. 150 (1885); *ib.* List Bds. W. I. p. 27 (1885).

Common in most of the Greater Antilles.

Guara rubra (LINN.). ✓

Tantalus ruber LINN. Syst. Nat. I, p. 241 (1766).

Ibis rubra D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 228 (1840).—GOSSE, Bds. Jam. p. 348 (1847).—DENNY, P. Z. S. 1847, p. 39 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 65 (Jamaica).

Endocimus ruber GUNDL. J. f. O. 1862, p. 83 (Cuba).—A. & E. NEWTON, Handb. Jamaica, p. 112 (1881).—CORY, List Bds. W. I. p. 27 (1885).

Recorded from Cuba and Jamaica.

GENUS *Plegadis* KAUP.

Plegadis KAUP, Skizz. Entuv. Gesch. p. 82, 1829.

Plegadis autumnalis (HASSELQ.). ✓

Tringa autumnalis HASSELQ. Reise nach Paläst Deutsch Ausg. 1762, p. 306.

Tantalus falcinellus LINN. Syst. Nat. I, p. 241 (1766).

Ibis falcinellus LEMB. Aves Cuba, p. 87 (1850).

Falcinellus erythrorhynchus CAB. J. f. O. 1856, p. 349 (Cuba); *ib.* GUNDL. 1882, p. 84 (Cuba).

Falcinellus ordii BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 352 (1866); *ib.* J. f. O. 1875, p. 318 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 366 (1878) (Porto Rico).

Plegadis falcinellus CORY, List Bds. W. I. p. 27 (1885).

Accidental in the Greater Antilles.

Plegadis gurauna (LINN.) is claimed to have occurred in the West Indies, but I can find no satisfactory record of its capture.

FAMILY Plataleidæ.

GENUS Ajaja REICH.

Ajaja REICHENBACHII, Handb. xvi, 1851.

Ajaja ajaja (LINN.). ✓

Platalea ajaja LINN. Syst. Nat. I, 10th ed. p. 140 (1758); *ib.* 12th ed. p. 231 (1766).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 216 (1840).—GOSSE, Bds. Jam. p. 346 (1847).—GUNDL. J. f. O. 1856, p. 347 (Cuba).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas); *ib.* BREWER, p. 308 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 206 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 65 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 351 (1866); *ib.* J. f. O. 1875, p. 311 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 275 (1878) (Grenada) (?).—CORY, Bds. Bahama I. p. 164 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 112 (1881).—TRISTRAM, Ibis, 1884, p. 168 (San Domingo).

Platalea ajaja DENNY, P. Z. S. 1847, p. 39 (Jamaica).

Ajaja rosea CORY, List Bds. W. I. p. 28 (1885).

Resident in the Bahamas and Greater Antilles.

FAMILY PHŒNICOPTERIDÆ.

GENUS Phœnicopterus LINN.

Phœnicopterus LINNÆUS, 1748; *ib.* Syst. Nat. I, p. 230, 1766.

Phœnicopterus ruber LINN. ✓

Phanicopterus ruber LINN. Syst. Nat. I, 10th ed. p. 139 (1758); *ib.* 12th ed. p. 230 (1766).—GOSSE, Bds. Jam. p. 390 (1847).—DENNY, P. Z. S. 1847, p. 39 (Jamaica).—GUNDL. J. f. O. 1856, p. 342 (Cuba).—SALLÉ, P. Z. S. 1857, p. 236 (San Domingo).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas); *ib.* XI, p. 97 (1867) (San Domingo); *ib.* BREWER, VII, p. 308 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 206 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 65 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 386 (1866); *ib.* J. f. O. 1874, p. 314 (Porto Rico); *ib.* 1875, p. 368 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 398 (1878) (Porto Rico).—CORY, Bds. Bahama I. p. 180 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 112 (1881).—CORY, Bull. Nutt. Orn. Club, VI, p. 155 (1881) (Haiti).—TRISTRAM, Ibis, 1884, p. 168 (San Domingo).—CORY, Bds. Haiti & San Domingo, p. 165 (1885); *ib.* List Bds. W. I. p. 28 (1885).

Resident and not uncommon in the Bahamas and Greater Antilles.

FAMILY ARDEIDÆ.

GENUS Ardea LINN.

Ardea LINNÆUS, Syst. Nat. I, p. 233, 1766.

Ardea herodias LINN. ✓

Ardea herodias LINN. Syst. Nat. I, p. 237 (1766).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 199 (1840).—GOSSE, Bds. Jam. p. 346 (1847).—A. & E. NEWTON, Ibis, 1859, p. 263 (St. Croix) (?).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 120 (1859) (Bahamas); *ib.* BREWER, p. 308 (1860) (Cuba).—SCL. P. Z. S. 1861, p. 81 (Jamaica).—GUNDL. J. f. O. 1862, p. 82 (Cuba).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 63 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 347 (1866).—LAWR. Ann. Lyc. N. Y. VIII, p. 98 (1867) (Sombrero).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 589 (St. Bartholomew); *ib.* p. 602 (Porto Rico).—GUNDL. J. f. O. 1875, p. 296 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 196 (1878) (St. Vincent); *ib.* p. 236 (Antigua); *ib.* p. 240 (Barbuda); *ib.* p. 274 (Grenada); *ib.* p. 359 (Martinique).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 352 (1878) (Porto Rico).—SCL. P. Z. S. 1879, p. 765 (Montserrat).—CORY, Bds. Bahama I. p. 166 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 111 (1881).—CORY, List Bds. W. I. p. 28 (1885).—WELLS, List Bds. Grenada, p. 9 (1886).

Ardea herodias ALBRECHT, J. f. O. 1862, p. 206 (Jamaica).

This species ranges throughout the West Indies.

Ardea occidentalis AUD. ✓

Ardea occidentalis AUD. Orn. Biog. III, p. 542 (1835).—LEMB. Aves Cuba, p. 82 (1850).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 63 (Jamaica).—A. & E. NEWTON, Handb. Jamaica, p. 111 (1881).—CORY, List Bds. W. I. p. 28 (1885).

Herodias occidentalis BREWER, Pr. Bost. Soc. Nat. Hist. VIII, p. 308 (1860) (Cuba).

?*Ardea wurdemannii* MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 64 (Jamaica).

Audubonia occidentalis GUNDL. Repert. Fisico-Nat. Cuba, I, p. 348 (1866); *ib.* J. f. O. 1874, p. 313 (Porto Rico); *ib.* 1875, p. 298 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 354 (1878) (Porto Rico).

Recorded from Porto Rico, Cuba, and Jamaica.

Ardea egretta GMEL. ✓

Ardea egretta GMEL. Syst. Nat. I, p. 629 (1788).—BRYANT, Pr. Bost. Soc. Nat. Hist. VIII, p. 120 (1859) (Bahamas); *ib.* X, p. 257 (1866) (Porto Rico).—SUND. Oefv. K. Vet. Akad. For. 1869, p. 602 (Porto Rico).—CORY, Bds. Bahama I. p. 167 (1880).—A. & E. NEWTON, Handb. Jamaica. p. 111 (1881).—CORY, List Bds. W. I. p. 28 (1885).

Ardea alba D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 191 (1840).

Egretta luce GOSSE, Bds. Jam. p. 346 (1847) (?).—ALBRECHT, J. f. O. 1862, p. 206 (Jamaica).

Ardea abba DENNY, P. Z. S. 1847, p. 39 (Jamaica).

Herodias egretta GUNDL. J. f. O. 1856, p. 341 (Cuba).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—SCL. P. Z. S. 1861, pp. 70, 80 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 63 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 348 (1866); *ib.* J. f. O. 1875, p. 299 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 241 (1878) (Barbuda) (?).—GUNDL. Anal. Soc. Esp. Hist. Nat. VIII, p. 355 (1878) (Porto Rico).

Herodias luce SALLÉ, P. Z. S. 1857, p. 236 (San Domingo).

Ardea leuce BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 97 (1867) (San Domingo).

Bahamas and Greater Antilles.

Ardea candidissima GMEL. ✓

Ardea candidissima GMEL. Syst. Nat. II, p. 633 (1788).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 196 (1840).—BRYANT, Pr. Bost.

- Soc. Nat. Hist. VII, p. 120 (1859) (Bahamas); *ib.* XI, p. 97 (1867) (San Domingo).—SCL. P. Z. S. 1879, p. 765 (Montserrat).—CORY, Bds. Bahama I. p. 167 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 111 (1881).—CORY, Bds. Haiti & San Domingo, p. 153 (1885); *ib.* List Bds. W. I. p. 28 (1885).—TRISTRAM, Ibis, 1884, p. 168 (San Domingo).
- Egretta candidissima* GOSSE, Bds. Jam. p. 336 (1847).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 63 (Jamaica).
- Herodias candidissima* SALLÉ, P. Z. S. 1857, p. 236 (San Domingo).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).
- Garzetta candidissima* SCL. P. Z. S. 1861, p. 81 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 349 (1866); *ib.* J. f. O. 1875, p. 304 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 357 (1878) (Porto Rico).—LAWR. Pr. U. S. Nat. Mus. I, p. 66 (1878) (Dominica); *ib.* p. 196 (St. Vincent); *ib.* p. 236 (Antigua); *ib.* p. 274 (Grenada).—WELLS, List Bds. Grenada, p. 9 (1886).

Bahamas and Antilles.

Ardea rufa BODD. ✓

- Ardea rufa* BODD. Tabl. P. E. p. 54 (1783).—CORY, Bds. Bahama I. p. 170 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 111 (1881).—CORY, Bull. Nutt. Orn. Club, VI, p. 154 (1881) (Haiti); *ib.* Bds. Haiti & San Domingo, p. 152 (1885); *ib.* List Bds. W. I. p. 28 (1885).
- Ardea rufescens* LEMB. Aves Cuba, p. 83 (1850).
- Ardea cubensis* LEMB. Aves Cuba, p. 84 (1850).
- Herodias rufescens* BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—GUNDL. J. f. O. 1862, p. 82 (Cuba).
- Herodias pealii* BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—GUNDL. J. f. O. 1862, p. 82 (Cuba).
- Dimigretta rufa* MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 63 (Jamaica).
- Demiigretta rufa* GUNDL. Repert. Fisico-Nat. Cuba, I, p. 348 (1866); *ib.* J. f. O. 1875, p. 302 (Cuba).
- Demiigretta pealii* GUNDL. Repert. Fisico-Nat. Cuba, I, p. 348 (1866); *ib.* J. f. O. 1875, p. 301 (Cuba).

Bahamas and Greater Antilles.

Ardea cærulea LINN. ✓

- Ardea cærulea* LINN. Syst. Nat. I, 10th ed. p. 143 (1758); *ib.* 12th ed. p. 238 (1766).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 201 (1840).—DENNY, P. Z. S. 1847, p. 36 (Jamaica).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 120 (1859) (Bahamas); *ib.* X. p. 257 (1866) (Porto Rico).—TAYLOR, Ibis, 1864, p. 171 (Porto Rico).—

- SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 588 (St. Bartholomew); *ib.* p. 602 (Porto Rico). — ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia). — CORY, Bds. Bahama I. p. 171 (1880). — A. & E. NEWTON, Handb. Jamaica, p. 111 (1881). — CORY, Bull. Nutt. Orn. Club, VI, p. 155 (1881) (Haiti); *ib.* Bds. Haiti & San Domingo, p. 154 (1885); *ib.* List. Bds. W. I. p. 28 (1885). — TRISTRAM, Ibis, 1884, p. 168 (San Domingo).
- “*Egretta nivea* GOSSE, Bds. Jam. p. 334 (1847)”?
- Egretta carulea* GOSSE, Bds. Jam. p. 337 (1847).
- Herodias carulea* BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba). — GUNDL. J. f. O. 1862, p. 83 (Cuba).
- Florida carulea* SCL. P. Z. S. 1861, p. 81 (Jamaica). — ALBRECHT, J. f. O. 1862, p. 205 (Jamaica). — MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 62 (Jamaica). — GUNDL. Repert. Fisico-Nat. Cuba, I, p. 349 (1866); *ib.* J. f. O. 1875, p. 305 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 357 (1878) (Porto Rico). — LAWR. Pr. U. S. Nat. Mus. I, p. 66 (1878) (Dominica); *ib.* p. 196 (St. Vincent); *ib.* p. 236 (Antigua); *ib.* p. 241 (Barbuda); *ib.* p. 274 (Grenada); *ib.* p. 359 (Martinique). — WELLS, List Bds. Grenada, p. 9 (1886).

Bahamas and Antilles.

Ardea virescens LINN. ✓

- Ardea virescens* LINN. Syst. Nat. I, 10th ed. p. 144 (1758); *ib.* 12th ed. p. 238 (1766). — D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 203 (1840). — DENNY, P. Z. S. 1847 p. 39 (Jamaica). — BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 120 (1859) (Bahamas). — SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 589 (St. Bartholomew); *ib.* p. 602 (Porto Rico). — CORY, Bds. Bahama I, p. 171 (1880); *ib.* Bull. Nutt. Orn. Club, VI, p. 155 (1881) (Haiti); *ib.* Bds. Haiti & San Domingo, p. 155 (1885); *ib.* List Bds. W. I. p. 28 (1885). — TRISTRAM, Ibis, 1884, p. 168 (San Domingo). — CORY, Ibis, 1886, pp. 472, 474, 475 (Barbadoes, La Desirade and Grand Terre); *ib.* Auk, III, p. 502 (1886) (Grand Cayman).
- Herodias virescens* GOSSE, Bds. Jam. p. 340 (1847). — ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).
- Butorides virescens* SALLÉ, P. Z. S. 1857, p. 236 (San Domingo). — A. & E. NEWTON, Ibis, 1859, p. 261 (St. Croix). — CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 378 (St. Thomas); *ib.* MARCH, 1864, p. 64 (Jamaica). — SCL. P. Z. S. 1871, p. 273 (Santa Lucia). — LAWR. Pr. U. S. Nat. Mus. I, p. 66 (1878) (Dominica); *ib.* p. 196 (St. Vincent); *ib.* p. 236 (Antigua); *ib.* p. 241 (Barbuda); *ib.* p. 275 (Grenada); *ib.* p. 359 (Martinique); *ib.* p. 460 (Guadeloupe). — SCL. P. Z. S. 1879, p. 765 (Montserrat). — ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia). — LISTER, Ibis, 1880, p. 44 (St. Vincent). — A. & E. NEWTON, Handb. Jamaica, p. 111 (1881). — WELLS, List Bds. Grenada, p. 9 (1886).

- Ocniscus virescens* BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba). — GUNDL. Repert. Fisico-Nat. Cuba, I, p. 349 (1866); *ib.* J. f. O. 1875, p. 307 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 359 (1878) (Porto Rico).
- Butorides brunnescens*? MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 64 (Jamaica).
- Ardea (Butorides) virescens* BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 97 (1867) (San Domingo).

Common throughout the Bahamas and Antilles.

Ardea brunnescens "GUNDL." ✓

- Ardea brunnescens* "GUNDL. Mss." — LEMB. Aves Cuba, p. 84 (1850). — REICH. J. f. O. 1877, p. 255. — CORY, List Bds. W. I. p. 28 (1885).
- Ocniscus brunnescens* CAB. J. f. O. 1856, p. 344. — BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860). — GUNDL. Repert. Fisico-Nat. Cuba, I, p. 350 (1866); *ib.* J. f. O. 1875, p. 308.
- Butorides brunnescens* BAIRD, Bds. N. Am. p. 677 (1858); *ib.* Cat. Am. Bds. No. 494 (1859). — GUNDL. Ann. N. Y. Lyc. Nat. Hist. 1862, p. 271. — GRAY, Handl. Bds. III, p. 32 (1871). — BD. BWR. & RIDGW. Hist. N. Am. W. Bds. I, p. 49 (1884).

SP. CHAR. — Pilium and occipital crest greenish black, showing a green gloss in the light; whole throat and neck rich rufous brown, showing a tinge of orange brown on the chin; back feathers slaty gray; wing-coverts not margined with white, but showing slight brownish edgings; otherwise resembling *A. virescens*.

Length, 19.00; wing, 6.50; tail, 2.75; tarsus, 2.10; bill, 2.60.

HABITAT. Cuba.

Ardea tricolor ruficollis (GOSSE). ✓

- Ardea leucogastra* D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 200 (1840).
- Egretta ruficollis* GOSSE, Bds. Jam. p. 338 (1847). — ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).
- Herodias ludoviciana* BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).
- Herodias ruficollis* GUNDL. J. f. O. 1862, p. 83? (Cuba).
- Demiegretta ludoviciana* MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 63 (Jamaica).
- Demiegretta ruficollis* GUNDL. Repert. Fisico-Nat. Cuba, I, p. 348 (1866); *ib.* J. f. O. 1875, p. 303 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 356 (1878) (Porto Rico).
- Ardea leucogastra* var. *leucoprymna* CORY, Bds. Bahama I. p. 168 (1880).
- Ardea ludoviciana* A. & E. NEWTON, Handb. Jamaica, p. 111 (1881).
- Ardea tricolor* CORY, List Bds. W. I. p. 28 (1885).

Ardea cyanirostris CORY, Bds. Bahama I, p. 168 (1880). — ALLEN, Bull. Nutt. Orn. VII, p. 21 (1881). — CORY, List Bds. W. I. p. 28 (1885).
Ardea tricolor ruficollis CORY, Auk, III, p. 502 (1886).

Common in the Bahama Islands and Greater Antilles (breeds).

In originally naming *A. cyanirostris* I considered it distinct from *A. ruficollis*, from the totally different coloration of the bill and legs supposed to occur only in the breeding season. Since that time specimens have been taken in the winter months representing this same state of plumage. *A. tricolor* undoubtedly assumes a yellow bill during most of the year, even if Audubon was wrong in his statement to the effect that it had a yellow bill in the breeding season. It is probable that the two birds are identical, but it is also possible that the Bahama bird may be distinct, and colonies occasionally wander to Florida, where it has been found breeding. This would account for the blue-billed specimens being taken in Florida, and would not prove its specific identity with *A. tricolor*.

SUMMER BIRDS OF SANTA CRUZ ISLAND, CALIFORNIA.

BY ELI WHITNEY BLAKE, JR.

THE island of Santa Cruz is the second in size of the Santa Barbara group; it is twenty-four miles in length by about six in breadth, and lies twenty-three miles off shore, directly opposite the town of Santa Barbara. In general character the island is mountainous with a comparatively level valley between two lofty ridges near its centre; the highest peaks are 2600 feet above the sea. Santa Cruz is of course very dry in summer, although there is water in some of the cañons throughout the year. It is owned by a stock company and is used as a sheep ranch; the herders constitute the only human inhabitants. My stay upon the island comprised two visits, extending from July 4 to July 24, and from August 6 to September 3. Our camp was in a cañon near Platts' Harbor, on the northern side of the island.

1. *Cepphus columba*. PIGEON-GUILLEMOT. — Common along the rocky shores up to July 24; none seen during my second visit. Probably breeds.

2. *Larus occidentalis*. WESTERN GULL.—Extremely abundant; nests on the isolated rocks along shore. Found many young.
3. *Larus heermanni*. HEERMANN'S GULL.—Less common than the preceding. Probably breeds; saw many young in the dark plumage.
4. *Sterna maxima*. ROYAL TERN.—Seen once.
5. *Phalacrocorax penicillatus*. BRANDT'S CORMORANT.—Abundant along shore; nests on isolated rocks.
6. *Phalacrocorax pelagicus resplendens*. BAIRD'S CORMORANT.—Less common than the preceding; probably breeds.
7. *Pelecanus californicus*. CALIFORNIA BROWN PELICAN.—Common off shore after August 14; none seen before that date. Very shy.
8. *Ardea herodias*. GREAT BLUE HERON.—Not uncommon along the rocky shores.
9. *Heteractitis incanus*. WANDERING TATTLER.—Common along the rocks.
10. *Arenaria melanocephala*. BLACK TURNSTONE.—Not uncommon after August 21. Taken on San Miguel in July by Mr. Streator, of Santa Barbara; these observations add 200 miles to the southerly range of the species as stated in the A. O. U. 'Check List.'
11. *Hæmatopus bachmani*. BLACK OYSTERCATCHER.—Common, and by no means shy; breeds on the outlying rocks.
12. *Zenaidura macroura*. MOURNING DOVE.—Common in the wooded cañons.
13. *Haliæetus leucocephalus*. BALD EAGLE.—Perhaps eight or nine different individuals seen and three empty nests, on island rocks.
14. *Ceryle alcyon*. BELTED KINGFISHER.—Common along shore.
15. *Colaptes* ——. FLICKER.—The Flicker of the island differs from typical *cafer* in that the scarlet malar patches of the male are replaced by cinnamon in the female; there is also other rusty-brown about the head; legs pale lilac. Not uncommon in the wooded cañons.
16. *Trochilus rufus*. RUFOUS HUMMINGBIRD.—Very common.
17. *Sayornis nigricans*. BLACK PHŒBE.—Common along the well-watered cañons.
18. *Empidonax difficilis*. BAIRD'S FLYCATCHER.—Very common up to July 24; nests in rocky caves; three or four nests found in this position.
19. *Otocoris alpestris* ——. HORNED LARK.—A variety of this bird inhabits the more exposed portions of the island; the worn and bleached plumage of my specimens precludes the possibility of determining them exactly.
20. *Aphelocoma insularis*. ISLAND JAY.—By far the commonest land-bird of the island, and familiar to the verge of impudence. General habits like those of its near relatives on the mainland. Several nests which must have belonged to this species were placed in trees or bushes between six and thirty feet from the ground. They exhibited no marked peculiarity of construction.
21. *Corvus corax sinuatus*. AMERICAN RAVEN.—Very common; feeds on the dead sheep. Nests on inaccessible cliffs, often at some distance from the sea.

22. *Carpodacus frontalis rhodocolpus*. CRIMSON HOUSE FINCH.—Quite common up to the middle of August. Nests in caves; one nest, containing three fresh eggs, found July 13.

23. *Spizella socialis arizonæ*. WESTERN CHIPPING SPARROW.—Not uncommon.

24. *Pipilo maculatus megalonyx*. SPURRED TOWHEE.—Very common in the hillside thickets.

25. *Chelidon erythrogaster*. BARN SWALLOW.—Very common; nests in caves.

26. *Lanius ludovicianus excubitorides*. WHITE-RUMPED SHRIKE.—Extremely common.

27. *Helminthophila celata lutescens*. LUTESCENT WARBLER.—Not uncommon in the wooded cañons.

NOTE.—I may also mention a small Wren, somewhat like *Thryothorus bewickii spilurus*, but with gray under-parts, wings faintly barred, and superciliary stripe obscure. It is very common in the cañons, and has a sweet song.



DESCRIPTION OF A NEW SUBSPECIES OF JUNCO FROM NEW MEXICO.

BY HENRY K. COALE.

Junco hyemalis shufeldti, sub. sp. nov.

Type, No. 106,035, Nat. Mus. Ad. ♂, Fort Wingate, N. M., Oct. 13, 1885; Dr. Robert W. Shufeldt, U. S. A.

Wishing to investigate a supposed difference in plumage between northern and southern California Juncos, I wrote to Professor Ridgway for the loan of some specimens of *Junco hyemalis oregonus*, which he kindly sent me. I could not make out what I hoped to in regard to the California bird, but five specimens from New Mexico at once attracted my attention. They were larger than the west coast specimens, with a peculiar mottling about the head and no distinct separation of the colors of the back and neck. Referring the matter to Professor Ridgway he writes: "I have examined carefully the specimens of *Junco hyemalis oregonus*, and agree with you that there are two well marked races. The *unnamed* one is that from the interior. This I am able to determine positively by examination of the original specimen collected by Townsend, and the basis of his *Fringilla oregona*, which is in our [Nat. Mus.] collection."

AVERAGE MEASUREMENTS OF FIVE AD. ♂ SPECIMENS FROM CALIFORNIA.

	Wing	Tail	Trs.	Bill
<i>Funco hyemalis oregonus</i> . . .	2.91	2.62	.71	.40

FOUR AD. ♂ SPECIMENS FROM FORT WINGATE, N. M.

<i>Funco hyemalis shufeldti</i> . . .	3.14	2.89	.73	.43
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THREE AD. ♀ SPECIMENS FROM CALIFORNIA.

<i>Funco hyemalis oregonus</i> . . .	2.74	2.44	.71	.40
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ONE AD. ♀ FROM FORT WINGATE, N. M.

<i>Funco hyemalis shufeldti</i> . . .	3.12	2.87	.72	.42
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Description.

Funco hyemalis oregonus. Coast specimens, California. *Adult males.* Head and neck all round dull black, sharply defined from colors of the body; back clear rusty; rump slate; central rectrices dull black, slaty edges; belly and breast white; two outer rectrices white; a narrow white streak on inner web of third feather; faint rusty wash on sides. Bill and legs light.—*Female.* Head dull slaty black, blending with rusty color of back; sides quite rusty; outer tail-feather white; second with broad white streak.

Funco hyemalis shufeldti. Fort Wingate, New Mexico. *Adult males.* Head dull black; neck mottled and fading into dull brown on back and scapulars, which in turn fades into dark slate on rump and upper tail-coverts. Tail darker; two outer rectrices pure white; third with white streak on inside web, in several extending to end of feather. Centre of breast and belly white; sides slaty rufous.—*Female.* Colors more subdued, with more of the rufous washing on sides. A specimen in my collection (Mus. H. K. C. No., 7321) ♂, shot at Waukegan, Ill., Feb. 20, 1887, appears to be of this species. Measurements: Wing, 3.05; tail, 2.75; tarsus .74; bill, .40. Head and neck mottled and sides washed with rusty. Some sixty skins of the common *Funco hyemalis* taken at the same time do not show these characteristics, but agree with the typical *hyemalis*.

It gives me pleasure to name this new variety in honor of my esteemed friend Dr. Robert W. Shufeldt, U. S. A., who collected and presented the specimens to the National Museum.

ORNITHOLOGICAL CURIOSITIES.—A HAWK WITH
NINE TOES, AND A BOBOLINK WITH SPURS
ON ITS WINGS.

BY HENRY K. COALE.

IN presenting the following illustrations I wish to thank my friends who have kindly assisted me—Mr. Jos. L. Hancock, who

made the original drawings from the specimens; Mr. Henry L. Fulton, who transferred the drawings to the engraver's block, and Mr. Fred. Erby, the engraver, whose generosity I especially appreciate, as he refused to take a cent for his skilful handiwork, although the order was given him to make the woodcut and send in his bill.



RIGHT LEG, INSIDE VIEW.
NATURAL SIZE.

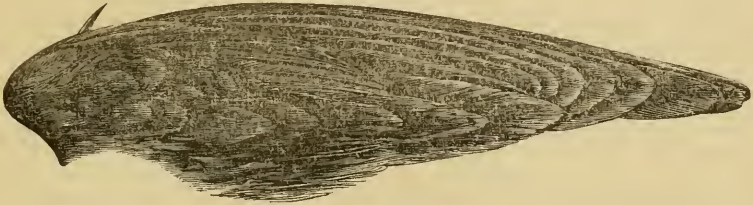
During the past fifteen years, I have devoted about two weeks in spring, a few days in fall, and a day or two in summer and winter in collecting bird skins. Out of some eight thousand specimens preserved I have only met with two abnormally developed individuals.

“No. 5924 (Mus. H. K. C.), *Buteo latissimus* (Wils.), Broad-winged Hawk. ♂ shot in small woods half-mile S. E. of Grand Crossing, Ill., Sept. 6, 1884. Length, 14.75; extent, 32.50. Legs and feet yellow. Bill black, cere greenish. Iris yellowish buff. Stomach contained crayfish.”

I regret that I did not send the fresh specimen in alcohol to Dr. Shufeldt for examination; a few critical notes from his pen would have been valuable in the present paper. I simply noted the following: The extra toe (of which the illustration is a perfect representation) grew out from the thigh, just above the ankle joint. It was not connected with the bone, but could be moved in any direction, seeming to grow from the muscles of the thigh. The upper bone slightly curved; one movable joint, a straight bone, and a perfect, movable claw. Color yellow. claw black, like the normal toes.

Professor Ridgway writes (1884) that the only bird in the National Museum collection having abnormal toes is a Gull. It is evidently a thing of rare occurrence, and further light on the subject from other collectors would be of interest.

"No. 7685 (Mus. H. K. C.), *Dolichonyx oryzivorus* (Linn.), Bobolink, ♂. Prairie, 1 mile west of S. Englewood, Ill., May 24, 1887." While collecting prairie birds with Mr. Amos W. Butler, I shot this specimen. On each wing is a horny spur, growing from the thumb tip.



The illustration shows the left wing, natural size. In both wings the spurs are exactly alike. We secured some twenty-three males and ten females the same day (Bobolinks being a rarity with Mr. Butler). This was the only specimen having spurs on the wings.

RECENT LITERATURE.

Ridgway's 'Manual of North American Birds.'*—The late Professor Baird long since projected a work on North American Birds which should serve as a manual and handy reference work for the sportsman and traveller as well as the naturalist. His great responsibilities and engrossing public duties, however, "precluded the possibility of his completing the work which he had so long cherished, and had even begun, when called to the high positions which he has filled with so much advantage to science and honor to himself." The work was therefore very naturally and fittingly intrusted to his pupil and collaborator in previous works on the

* A | Manual | of | North American Birds. | By | Robert Ridgway. | — | Illustrated by 464 outline drawings of the | generic characters. | — | Philadelphia: | J. B. Lippincott Company. | 1887.—Royal 8vo, pp. i-xi, 1-631. pll. i-cxxiv. (Reviewed from advance sheets, received from the Publishers, Aug. 5, 1887.)

same subject and his successor as Curator of the Department of Birds in the United States National Museum. It is needless to say that the work could scarcely have fallen into more trustworthy hands.

The object of the work, as stated in the preface, "is to furnish a convenient manual of North American Ornithology, reduced to the smallest compass, by the omission of everything that is not absolutely necessary for determining the character of any given specimen, and including, besides the current nomenclature of each species, a statement of its natural habitat and other concomitant data." Consequently the volume is made up of a series of analytical keys, covering all the various grades of groups from orders to subspecies. Under each genus, in case it contains more than a single species, are given the characters common to all the species, followed by the distinctive features of the various species and subspecies. In this way reiteration is reduced to a minimum, and the text compressed to the smallest practicable amount. In addition to the essential characters of the species and subspecies, however, their various stages of plumage are concisely indicated. The strictly biographical matter consists of a brief statement of the character of the nest and eggs, and the habitat.

The classification, nomenclature, and numeration "correspond strictly with the 'Check List of North American Birds' published by the American Ornithologists' Union." The species added or described since the publication of the 'Check List' have, however, been interpolated in their proper places, and besides these many extra-limital species have been included, but are distinguished from the strictly North American by being given in smaller type and without numeration. The geographical limits, so far as the numbered species are concerned, are those of the A. O. U. 'Check List'; "but practically these limits have been enlarged so as to include all the species known to inhabit Socorro Island, off the coast of Northwestern Mexico, which is decidedly *Nearctic*, or North American, in its zoölogical affinities, while in many cases other extra-limital species have been included, for the sake of comparison and also on account of the greater or less probability of their occurrence within the southern boundary of the United States," or in Alaska. These extra-limital species, however, include many not likely to be found within the United States, since the Mexican, Central American, Cuban, and Bahaman species of characteristically North American genera, and the genera of these regions belonging to North American families, are also embraced, as are also all the species of the order Tubinares belonging to genera which have representatives in North American waters. While these inclusions, apparently several hundred in number, have greatly increased not only the size of the work but the labor of preparing it, they add immensely to its value and interest.

The 'Manual' is based primarily upon the collection of the National Museum, but all the leading ornithological collections of the country, both public and private, have been drawn upon for additional material, including some unique and many type specimens, for which due acknowl-

edgements are made, as well as to Dr. Leonhard Stejneger for aid in settling vexed questions of synonymy and difficult problems of relationship. The nearly 500 outline drawings of generic characters are grouped at the end of the volume in 124 plates.

It appears from the 'Appendix' (pp. 591-594) that four new subgenera, and thirty-nine new species and subspecies are described in the work, of which *fourteen* of the species and subspecies are from North America, as defined in the A. O. U. 'Check-List'; the rest being from Mexico, Central America, and the Bahamas. Besides the fourteen species and subspecies described as new to North America, *thirty-one* others not included in the A. O. U. 'Check-List,' are given as North Americans; eight of these are introduced species; eleven have been described since the publication of the 'Check-List'*; seven have been added on the ground of actual capture since the 'Check-List' appeared, and four are forms ignored as nominal in making up the 'Check-List.' On the other hand, two recognized in the 'Check-List' are here "cancelled." It further appears that twelve technical names have undergone change, usually through the discovery of tenable names given prior to those adopted in the 'Check-List,' but in some instances through corrections of identification.

Æstrelata gularis of the 'Check-List' becomes *Æ. scalaris* Brewst.; *Somateria mollissima* becomes *S. m. borealis* (Brehm), the American form being now considered subspecifically distinct from the European; *Ardea rufa* becomes *A. rufescens* Gm., the name *rufa* proving to be preoccupied; the subgenus *Nyctherodius* becomes *Nyctinassa* Stejn., the former name being preoccupied; the subgenus *Rhyacophilus* is replaced by *Helodromas* Kaup; the genus *Ulula* becomes *Scotiaptex* Sw., the use of the name *Ulula*, in this connection, having been found to be an error; *Dryobates scalaris* is now *D. s. bairdi* (Scl.), the form in question proving to be not true *scalaris*; *D. stricklandi* becomes *D. arizonæ* (Harg.) (see Auk, III, p. 426); *Contopus borealis* is made the type of a new subgenus *Nuttallornis*; *Molothrus æneus* is placed in the genus *Calliothrus* Cass.; *Pinicola enucleator* appears once more as *P. c. canadensis* (Cab.); *Carpodacus frontalis* becomes *C. mexicanus frontalis*; for the genus *Certhiola* it is proposed (in the 'Appendix,' p. 590) to substitute the name *Cereba*, on the ground of priority.

The 'new' species and subspecies characterized as North American are *Coccyzus americanus occidentalis*, from "Western United States, north to Oregon, east to New Mexico and Colorado, south over table-lands of Mexico"; *Coccyzus maynardi*, "Bahamas and Florida Keys"; *Aphelocoma californica hypoleucus*, "Lower California"; *Corvus corax principalis* = *Corvus carolinivorus* Bartr., "*nomen nudum*" (but what is the objection to *C. corax carolinivorus* (Bd.)?); *Corvus americanus hesperus*, "Western United States, north to Washington Territory (Puget Sound), Idaho, Montana, etc., south to Northern Mexico, east to Rocky Moun-

* Exclusive of one described in 'The Auk' for July, 1887—too late doubtless for notice in the 'Manual.'

tains"; *Agelaius phœniceus sonoriensis*, "Northwestern Mexico and Lower Colorado Valley, in Southern California and Arizona; south to Mazatlan"; *Agelaius phœniceus bryanti*, "Bahamas and Southern Florida (Miami, Key West, etc.)"; *Pinicola enucleator kadiaka*, "Kodiak to Sitka, Alaska," and "probably southward to higher Sierra Nevada of California"; *Carpodacus mexicanus (frontalis* in the text, p. 291) *ruberrimus* (provisionally separated) Lower California; *Plectrophenax nivalis towensendi*, "Prybilof Islands, Alaska, and Commander Islands, Kamtschatka"; *Passerina versicolor pulchra*, "Lower California and Western Mexico"; *Lanius ludovicianus gambeli*, "California, especially coast district"; *Phalacroptilus nuttalli californicus* (provisionally separated), Northern California; *Parus stoneyi*, Northwestern Alaska.

Old forms rejected from the 'Check-List' but here reinstated are *Cyanocitta stelleri annectens* Bd., *Guiraca cœrulea eurhyncha* Cs., *Progne cryptoleuca* Bd., *Vireo gilvus swainsoni* Bd., and *Columbigallina passerina pallescens* Bd. The two excluded are *Carpodacus frontalis rhodocolpus* (now believed to be merely an individual color-phase), and *Peucæa arizonæ* Ridgw. = *P. mexicanus* (Lawr.).

Colinus virginianus cubanensis is accredited to "Cuba and Southwestern Florida," and is hence enumerated as North American.

A copious and carefully prepared index closes the volume, which must long reflect honor upon its author.—J. A. A.

Olphe-Galliard's Ornithology of Western Europe.*—In this work the veteran French ornithologist deposits the results of the labors and studies of a long and useful life. The plan is one of considerable magnitude, inasmuch as he contemplates giving not only full descriptions, synonymies, and biographies of all the species inhabiting Southwestern Europe (embracing Portugal and Spain, with the Azores and the Balears, France, French Switzerland, all the country to the west of the Rhine, and the English Channel Islands) but also such species as are nearly related to, or may be easily confounded with, the birds inhabiting the region particularly treated of. In this way the account of several genera has grown into monographs which will be found to contain material useful also to other ornithologists than those who are most directly interested in the particular ornithology referred to.

The work will be issued in 40 parts, or fascicules, each comprising one or more groups or families, and each one is separately paged. This is certainly a great drawback, but was necessary in order to secure a speedy publication, as the parts are issued immediately after having been finished

* Contributions | a | la | Faune Ornithologique | de | L'Europe Occidentale | —
Recueil | comprenant | les espèces d'oiseaux qui se reproduisent dans cette région |
ou qui s'y montrent régulièrement de passage | augmenté | de la description des
principales espèces exotiques | les plus voisines des indigènes | ou susceptibles d'être
confondues avec elles | ainsi que l'énumération des races domestiques | Par Léon
Olphe-Galliard.—8°

by the author irrespective of their place in the system. On the other hand, the arrangement is convenient to those who only want to purchase some of the monographs, as each fascicule is sold separately.

In our days of systematic uncertainty it is perhaps not to be wondered at that Mr. Olphe-Galliard still in the main adheres to the "natural system" which he proposed just thirty years ago, in pre-Darwinian times. It commences with the swimmers, runs through waders, birds of prey, Scansores, and Passeres, to Pigeons and game birds, and ends with the Ostriches, the object being to establish a lineal system which would represent the birds as forming a continuous chain between the "lower vertebrates" and the mammals.

American ornithologists will note with satisfaction that Mr. Olphe-Galliard has selected the year 1758 for his starting point in regard to the nomenclature, and that he declares for a strict adherence to the law of priority. We remark, however, that he adopts generic names previously applied in another class of animals, a course opposite to most previous codes of nomenclature, and also to Canon XXXIII, A. O. U. Code. Nor is the law of priority always respected as it ought to be. For instance, he accepts *Clivicola* of Forster as the older name, but refuses to recognize the same author's genera *Hirundo* and *Chelidon*, though their status in regard to Boie's subsequent appellations is exactly the same as that of *Clivicola*.

Want of space prevents us from entering into a detailed review, which may be reserved until the whole work is concluded. That the latest sources have not always been accessible to the author is hardly to be criticized when we know that the work has been prepared in a small provincial town far from the great libraries and museums. On the other hand, it is but just to mention that the author's great familiarity with foreign languages and literature is shown to great advantage throughout the book, and is the more to be appreciated since it is of so rare occurrence among the French ornithologists.

France has contributed very little to European ornithology during recent years, and the present work is really the only larger contribution since the publication of Degland and Gerbe's 'Ornithologie Européenne' twenty years ago.

The present work appears to be published entirely at the expense of the author, and its completion, therefore, depends upon the encouragement of the ornithological public expressed in numerous subscriptions, of which there ought to be no lack, as the price is very reasonable. The following fascicules have come to hand: I, Brevipennes (1884); V, Cygnidæ, and XXXIII, Ploceidæ (genus *Passer!*) (1885); XXXVII-XL, Gallinæ, and Cursores (1886); XXII, Brevipedes (1887).—L. S.

Minor Ornithological Publications.—'Forest and Stream,' Vols. XXVI and XXVII, contains the following (Nos. 1127-1199):—

1127. *Winter Snipe in Colorado.* By R. V. R. S. *Forest and Stream*, Vol. XXVI, No. 1, Jan. 26, 1886, p. 5.—Wilson's Snipe reported as occurring about warm spring holes in the coldest winter weather.

1128. *English Sparrow as Egg Robber*. E. D. Bowles. *Ibid.*, p. 5, Jan. 28, 1886.

1129. *Cardinal Bird in New York in Winter*. By C. P. *Ibid.*, No. 2, Feb. 4, 1886, p. 24.—Seen on several occasions in Central Park.

1130. *The Audubon Society*. Editorial. *Ibid.*, No. 3, Feb. 11, p. 41; No. 4, Feb. 18, p. 61.—Its formation proposed, and the work it is intended to do.

1131. *The Audubon Society*. *Ibid.*, No. 5, Feb. 25, pp. 83, 84.—Editorial remarks and letters on the Audubon Society.

1132. *Birds and Bonnets*. Frank M. Chapman. *Ibid.*, No. 6, Feb. 25, p. 84.—List of birds seen on ladies' hats in an afternoon's walk in New York City.

1133. *A Bill for Bird Protection*. *Ibid.*, No. 5, Feb. 25, p. 84.—The first appearance in print of the A. O. U. Committee's proposed bill.

1134. *The Audubon Society*. *Ibid.*, No. 6, March 4, pp. 103-104.—Editorial remarks and extracts from the A. O. U. Committee's 'Bulletin No. 1,' as published in 'Science,' followed by various letters on the work of the Society. See further, on the subject of the Audubon Society, No. 7, March 11, p. 124; No. 8, March 18, p. 141; No. 9, March 18, p. 144; No. 10, April 1, p. 182; No. 11, April 8, p. 201, 203; No. 12, April 15, p. 222; No. 13, April 22, p. 243; No. 14, April 29, p. 262; No. 15, May 6, p. 283; No. 17, May 20, p. 327; No. 18, May 27, p. 347; No. 23, July 1, p. 447; No. 24, July 8, p. 467; No. 25, July 15, p. 487.

1135. *The Feather Industry*. Editorial. *Ibid.*, No. 9, March 25, pp. 162, 163.—On the extent of the traffic in birds for millinery purposes.

1136. *The Ivory-Billed Woodpecker*. By Horace A. Kline. *Ibid.*, No. 9, March 25, p. 163.—Taken near St. Mark's River, Florida.

1137. *Hawks and Owls. Beneficial or Injurious?* *Ibid.*, No. 9, March 25, pp. 163, 164. Report of a committee of the West Chester (Pa.) Microscopical Society on the good and bad traits of these birds, including letters on the subject from Dr. C. Hart Merriam, Robert Ridgway Dr. Leonhard Stejneger, H. W. Henshaw, and L. M. Turner.

1138. *Taxidermists and Milliners' Agents*. By Raymond Lee Newcomb. *Ibid.*, No. 10, April 1, p. 183.

1139. *The Sparrow Hawk in Winter*. By H. W. Henshaw. *Ibid.*, No. 12, April 15, p. 223.—On its food in winter.

1140. *A Least Bittern's Nest in a Tree*. F. L. T. *Ibid.*, No. 12, April 15, p. 223.

1141. *Sparrow Hawks Wise and Foolish*. By M. G. Ellzey. *Ibid.*, No. 13, April 22, p. 224.—On its food in winter, in answer to Mr. Henshaw. (See above, No. 1139.)

1142. *The Sparrow Hawk's Services*. By A. (=H.] W. Henshaw. *Ibid.*, No. 14, April 19, p. 263. (Under the same title is a note also by Henry Litchfield West.)—In answer to the last (No. 1141).

1143. *Tame Ruffed Grouse*. By M. H. Cryder. *Ibid.*, No. 15, May 6, p. 284.—A frequent visitor to the dooryard, and so tame as to take food 'from the hand.

1144. *The Birds of Michigan*. By Dr. Morris Gibbs. *Ibid.*, No. 16, May 13, pp. 395, 396; Vol. XXVII, No. 7, Sept. 9, pp. 123, 124; No. 12, Oct. 14, pp. 223-224.
1145. [*Destruction of Pigeons in Pennsylvania*.] Editorial. *Ibid.*, No. 16, May 13, p. 302.—“Thousands and tens of thousands” killed on their nesting grounds.
1146. *The Sparrow Hawk*. By M. G. Ellzey, M. D. *Ibid.*, No. 16, May 13, p. 304.—A second reply to Mr. Henshaw (see above, No. 1142), respecting the Sparrow Hawk as a destroyer of grasshoppers, etc.
1147. *Eagles [Halieetus leucocephalus] breeding in Captivity*. By Henry Hulce. *Ibid.*, No. 17, May 20, p. 327.
1148. *Habits of the [Bald] Eagle*. By Henry Hulce. *Ibid.*, No. 19, June 3, p. 369.
1149. *Wildfowl of Western Waters*. By Junius P. Leach. *Ibid.*, No. 18, May 27, p. 348; No. 19, p. 370.—Valuable information respecting the Cranes, Swans, Geese, and Ducks.
1150. *A Note about Audubon*. *Ibid.*, No. 19, June 3, p. 369.—Extract from a private letter, written Jan. 2, 1841, by Lewis Warriner.
1151. *Birds of Central Park, New York [City]. A Preliminary List*. By Lewis B. Woodruff and Augustus G. Paine, Jr. *Ibid.*, No. 20, June 10, pp. 386, 387.—A briefly annotated list of 121 species. The European Goldfinch (*Carduelis elegans*) is given as “Resident; common; breeds.” (See also *Ibid.*, No. 25, July 15, p. 488.)
1152. *The Toledo Eaglet*. By E. D. Potter. *Ibid.*, No. 20, May 10, p. 387.—Bred in confinement. (See above, No. 1148.)
1153. *Additions to California Avifauna*. By Walter E. Bryant. *Ibid.*, No. 22, June 24, p. 426.—The additions are *Porzana noveboracensis*, *P. carolina*, *Anas penelope*, and *Selasphorus floressii* (Loddiges).
1154. *The Toledo Eaglet*. By Henry Hulce. *Ibid.*, No. 22, June 24, p. 426. (See above, Nos. 1148 and 1152.)
1155. *Swifts, Humming Birds and Goatsuckers*. By R. W. Shufeldt. *Ibid.*, No. 23, July 1, p. 447.—On the relationship of these birds, and an appeal for aid in obtaining material for investigation.
1156. *Baru Owl in Ohio*. By A. Hall. *Ibid.*, No. 23, July 1, p. 446.
1157. *Two Hints in Taxidermy*. By W. E. B[ryant]. *Ibid.*, No. 24, July 8, p. 467.—(1) Strengthening the neck in small birds as well as large ones, by using a splinter of wood (as a hard-wood toothpick) in small birds, and a piece of wire or wood in larger ones; (2) the use of absorbent cotton for filling the skins.
1158. *Occurrence of the Ivory Gull at Halifax, [N. S.]*. By J. Mathew Jones. *Ibid.*, No. 25, July 15, p. 487.
1159. *Disappearance of the Bobolink [at Springfield, Mass.]*. By E. H. Lathrop. *Ibid.*, No. 26, July 22, p. 507.
1160. *Early Occurrence of the Great White Egret at Washington, D. C.* By C. Hart Merriam. *Ibid.*, No. 26, July 22, p. 508.—Taken July 15, 1886.
1161. *The Shore Birds*. By X. Y. Z. [=R. L. Newcomb]. *Ibid.*, No. 26, July 22, p. 509.—Dates of their arrival at Salem, Mass., in July 1886.

1162. *Prairie Fires and the [Pinnated] Grouse.* Editorial. *Ibid.*, Vol. XXVII, No. 1, July 21, 1886, p. 1.—The number of the birds sadly diminished by the late 'burning over' of prairie lands.

1163. *Bird Protection.* Editorial. *Ibid.*, No. 1, July 29, p. 4.—The blanks prepared for use by the American Museum of Natural History in issuing permits for collecting under the New York law are published, with editorial comment.

1164. [*Disappearance of*] *the Bobolink [in Central New York.]* By Portsa. *Ibid.*, No. 1, July 29, p. 4.

1165. *The Toledo Eaglet.* By Henry Hulce. *Ibid.*, No. 1, July 29, p. 4.—A further account of the Bald Eagle, hatched and reared in confinement. (See above, No. 1152.)

1166. *Cerros Island.* By Walter E. Bryant. *Ibid.*, No. 4, Aug. 19, pp. 62-64.—An interesting account of the Island, followed by an annotated list of the birds observed there, numbering 27 species.

1167. *The Audubon Society.* Editorial. *Ibid.*, No. 4, Aug. 19, p. 64.—Its incorporation, including 'Certificate of Incorporation.'

1168. *Occurrence of Turkey Buzzard on Long Island.* By Robert B. Lawrence. *Ibid.*, No. 4, Aug. 19, p. 64.—Seen at Flushing, Aug. 2, 1885.

1169. *The Future for American Ornithology.* By R. W. Shufeldt. *Ibid.*, No. 5, Aug. 26, p. 84.—A paper read before the Ridgway Ornithological Club of Chicago, Aug. 12, 1886, calling attention to useful lines of ornithological investigation, etc.

1170. *Bird Migration.* By B. Horsford. *Ibid.*, No. 6, Sept. 2, p. 103.—Pessimistic remarks on ornithological matters in general.

1171. *Two Indian Bird Stories.* L. W. Shultz. *Ibid.*, No. 6, Sept. 2, p. 104.—Folk-lore stories of the Woodpecker and Hawk.

1172. *The Audubon Society.* Editorial. *Ibid.*, No. 6, Sept. 2, p. 104; No. 10, p. 184; No. 19, Dec. 2, p. 361.

1173. *Can Birds Count Their Eggs.* By J. L. Davison. *Ibid.*, No. 6, Sept. 2, p. 104.

1174. *Spotted Sandpiper Swimming.* By H. A. Kline. *Ibid.*, No. 8, Sept. 16, p. 145.

1175. *John James Audubon.* By Charles Lanman. *Ibid.*, No. 9, Sept. 23, pp. 162, 163.

1176. *Economic Ornithology and Mammalogy.* *Ibid.*, No. 10, Sept. 30, p. 185.—The Circulars asking for information on the economic relations of birds and mammals, issued by the Chief of Division of Economic Ornithology and Mammalogy of the U. S. Department of Agriculture.

1177. *Wild Turkey Domestication.* By N. A. T. *Ibid.*, No. 11, Oct. 7, p. 204.

1178. *A Use for Falconry.* Editorial. *Ibid.*, No. 13, Oct. 21, p. 241.—Trained Hawks suggested as a means of protecting the rice fields from the depredations of the Ricebirds.

1179. *The Sport of Hawking.* By R. W. Seiss. I, II. *The Peregrine Falcon.* *Ibid.*, No. 13, Oct. 21, p. 243; No. 14, Oct. 28, p. 263;

III. *The Gyrfalcon*. No. 15, Nov. 4, pp. 282, 383; IV. *The Lanier Falcon*. No. 16, Nov. 11, pp. 202, 203; V. *The American Merlin and Kestrel*. No. 21, Dec. 16, pp. 403, 404.—On the rearing, training and management of Falcons for use in hawking. with illustrations.

1180. *Maryland Bird Notes*. By J. Murray Ellzey. *Ibid.*, No. 14, Oct. 28, p. 264.—A Hudsonian Godwit shot at West River, Md.

1181. *Snipe Decoration*. Editorial. *Ibid.*, No. 15, Nov. 4, p. 281.—Use of Snipe and migratory game birds for millinery purposes, in lieu of song birds.

1182. *That Thieving Rice Bird*. By Chas. F. Amery. *Ibid.*, No. 15, Nov. 4, pp. 283, 284.—On its probable utility as well as destructiveness.

1183. *Protection of Birds by Legislation*. Bulletin No. 2 of the A. O. U. Committee on Bird Protection. *Ibid.*, No. 16, Nov. 11, pp. 304, 305.

1184. *American Ornithologists' Union*. Editorial. *Ibid.*, No. 17, Nov. 18, p. 322, and No. 18, Nov. 25, p. 341.—Brief account of the annual meeting for 1886.

1185. *Capture of an Eider Duck*. By L. S. Foster. *Ibid.*, No. 17, Nov. 18, p. 323.—A young male *Somateria dresseri* shot Nov. 8, 1886, at Center Moriches, Long Island, N. Y.

1186. *Shore Bird Nomenclature*. By J. C. Cahoon. *Ibid.*, No. 18, Nov. 25, p. 343. See also No. 19, Dec 2, p. 363.

1187. *Snowy Owl in Illinois*. By H. A. Kline. *Ibid.*, No. 18, Nov. 25, p. 343.—An early record—Nov. 13, 1886.

1188. *Weapons in Game*. By Sancho. *Ibid.*, No. 18, Nov. 25, p. 343.—An ivory arrowhead in the breast of a Goose taken in Yolo Co., Cal.

1189. *A Golden Eagle in Connecticut*. By Inquirer. *Ibid.*, No. 19, Dec. 2, p. 362.—Taken near Stamford about Nov. 1, 1886.

1190. *Shore Bird Nomenclature*. By John Murdock. *Ibid.*, No. 20, Dec. 9, p. 382.

1191. "*Weapons in Game*." By John Murdock. *Ibid.*, No. 20, Dec. 9, p. 383.—In reply to 'Sancho' (See above, No. 1188); the ivory arrowhead identified as of Eskimo origin.

1192. *Song Bird Legislation*. By John D. Collins. *Ibid.*, No. 21, Dec. 16, p. 402.—An absurd arraignment of the New York law for the protection of birds.

1193. *Long Island Bird Notes*. By Robert B. Lawrence. *Ibid.*, No. 22, Dec. 23, p. 428.—Notes on 4 species—*Tringa maritima*, *Somateria dresseri*, *Oceanites oceanicus*, and *Nyctala acadica*.

1194. *Arizona Bird Notes*. By Herbert Brown. *Ibid.*, No. 24, Jan. 6, 1887, p. 464.—An interesting paper, relating chiefly to the winter birds.

1195. *Clark's Crow in British Columbia*. By John Fannin. *Ibid.*, No. 24, Jan. 6, 1887, p. 464.

1196. *Florida Bird Notes. Eagles, Hawks and Owls*. By Horace A. Kline. *Ibid.*, No. 25, Jan. 13, p. 484.—Contains nearly a column and a half on the nesting of the Bald Eagle, and interesting notes on several Hawks and Owls.

1197. *The Terns of Matinicus Rock, [Coast of Maine]*. By Wm. G.

Grant. *Ibid.*, No. 25, Jan. 13, p. 485.—On the wholesale slaughter of Terns at this point for millinery purposes by C. E. Cahoon, of Taunton, Mass., during the season of 1886.

1198. *Avian Tuberculosis in the Ruffed Grouse*. By Morton Grinnell, M. D. *Ibid.*, No. 26, Jan. 20, p. 503.

1199. *Migrating Meadow Larks*. By J. H. D. *Ibid.*, No. 26, Jan. 20, pp. 503, 504.—J. A. A.

Publications Received.—Berlepsch, Hans von. Systematisches Verzeichniss der von Herrn Ricardo Rohde in Paraguay gesammelten Vögel und Appendix Systematisches Verzeichniss der in der Republik Paraguay bisher beobachteten Vogelarten. (Separat. aus Journ. f. Orn., 1887, pp. 134 et seq.)

Blakiston, T. W. Water-Birds of Japan. (Proc. U. S. Nat. Mus., 1886, pp. 652-660.)

Bryant, Walter E. (1) Description of a new subspecies of Petrel from Guadalupe Island. (Bull. Cal. Acad. Sci. II, No. 8, 1887.) (2) Discovery of the nest and eggs of the Evening Grosbeak (*Coccothraustes vespertina*). (Ibid.) (3) Unusual Nesting Sites. (Ibid.)

Emerson, W. Otto. Ornithological Observations in San Diego County. (Bull. Cal. Acad. Sci. II, No. 7, 1887.)

Harvie-Brown, J. A., J. Cordeaux, R. M. Barrington, A. G. More and W. Eagle Clarke. Report on the Migration of Birds in the Spring and Autumn of 1886. 8vo, 1887, pp. 174.

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GENERAL NOTES.

Merganser americanus breeding in New Mexico.—On and near the head of the Pecos River, New Mexico (latitude $35^{\circ} 45'$, elevation 6800 feet), I saw, July 2, 1885, a female American Merganser, with four little ones not over ten days old. I fail to find any record of the birds' breeding so far south, therefore think the 'find' worthy of mention.—N. S. Goss, *Topcka, Kan.*

The Clapper Rail again in Massachusetts.—I have the pleasure of hereby presenting for record a third example of *Rallus longirostris crepitans* obtained in this State; and at a remarkably late date in the season.

The bird was taken in a small pond-hole in 'Rocky Nook,' Kingston, on Dec. 29, 1885. It was in fair condition, showing no sign of being crippled.

It is now in possession of W. C. Hathaway of Plymouth, to whom I am indebted for above particulars.

The dates and places of the previous authentic records are: May 4, 1875, Boston Harbor (*Purdie*, Bull. Nutt. Orn. Club, 1877, p. 22), and October, 1879, Plymouth (*Brewster*, Bull. Nutt. Orn. Club, 1881, p. 62).—F. C. BROWNE, *Framingham, Mass.*

Ictinia mississippiensis and *Ægialitis nivosa* nesting in Southern Central Kansas.—While collecting in this State, I found, May 9, 1887, quite a number of the Mississippi Kites sailing over and into the timber skirting the Medicine River, near Sun City, Barber County, and from their actions knew that they were mating and upon their breeding grounds, —a lucky find worth following up. On the 11th I noticed several of the birds with sticks in their bills (green twigs in leaf), flying aimlessly about as if undecided where to place them, keeping hidden within the trees as much as possible, dropping the sticks when from fright or other cause they raised much above the tree tops. I succeeded, however, in tracing one of the birds to an old nest in the forks of a cottonwood; having thus located the birds, and knowing that it must be some time before they would begin to lay, I left for the salt plains on the Cimarron River, in southwestern Comanche County and in the Indian Territory, where I found the Snowy Plover quite abundant. (See *Auk*, Vol. III, No. 3, p. 409, in regard to finding the birds nesting in the same vicinity last season.) I returned to the Kites on the 16th, and remained watching the birds until the morning of the 22d, at which time the nests found, seven in number, appeared to be completed, and I saw a pair of the birds in the act of copulation. A business matter called me home, and I hired the man with whom I stopped to climb the trees on the 28th for the eggs, but a hailstorm on the 25th injured the nests badly, and in one case beat the nest out of the tree. On the 31st he collected four sets of two eggs each and one with only one egg—it being a hard tree to climb he decided to take the egg rather than wait to see if the bird would lay more. Not hearing from him

I returned to the ground June 10, and put in the day examining the nests, etc., collecting two more sets of two eggs each. One of the sets was nearly ready to hatch, but with care I was able to save it. The eggs are all white, or rather bluish white, without markings or shell stains. It having rained nearly every day since the commencement of the month, the two last sets collected are somewhat soiled and stained by the wet leaves in the nests. The eggs measured by sets as follows, viz.: 1st, 1.55×1.33 , 1.52×1.36 ; 2nd, 1.76×1.48 , 1.65×1.35 ; 3d, 1.70×1.39 , 1.56×1.35 ; 4th, 1.70×1.37 , 1.68×1.30 ; 5th, 1.75×1.30 ; 6th, 1.54×1.31 , 1.45×1.24 ; 7th, 1.70×1.38 , 1.68×1.43 . The old nests had a few leaves for lining in addition to the leaves attached to the twigs used in repairing the same, but the new ones appeared to be without additional leaves. They were all built either in the forks from the main body, or in the forks of the larger limbs of the cottonwood and elm trees, and were at least from ten to a hundred rods apart, were not bulky, and when old would be taken for the nests of the common Crow. They ranged in height from twenty-five to fifty feet from the ground.—N. S. Goss, *Topeka, Kan.*

The Merlin (*Falco aesalon*) in Greenland.—We have recently received from Dr. C. F. Wiekpen, of the Museum of Oldenburg, Germany, a fine specimen of *Falco aesalon* Lath., from Greenland. This makes an additional species for the fauna of North America, I believe.

The record is as follows: "*Falco aesalon* Lath. ♂ juv. Shot at Cape Farewell, Greenland, May 3, 1875." It is *aesalon* without any question—a young of the preceding year. We got it with other specimens from the same locality through Dr. W., and I have no reason whatever to doubt the correctness of the label, as of the hundreds we have received from him I have not as yet detected any discrepancies, and the labels are usually much more minute than the above. Gov. Fencker, who was stationed at Godhavn, Greenland, as Governor when I was there, told me he had occasionally seen a small Hawk between Julianshaab and Gothaab, but had failed to secure a specimen. These were probably *F. aesalon*.—LUDVIG KUMLIEN, *Public Museum, Milwaukee, Wis.*

Notes on *Melanerpes formicivorus bairdi* in New Mexico.—To-day is the 6th of August (1887), and while out collecting at a point some two miles from Fort Wingate, New Mexico, I shot and secured a fine adult male specimen of this Woodpecker, and in unusually good plumage for this time of the year, with few or no pin-feathers present to speak of; a feature wherein it differed from a number of other *Picidæ* taken on the same occasion. Having collected birds in this locality for the past two and a half years without ever having seen a specimen of this Woodpecker here before; and in view of the fact that our 'Check List' gives its habitat and range as "Pacific Coast Region of the United States, east into Arizona, south into Mexico," I desire to make this record here of its capture in the Territory of New Mexico, and at a point further east than, so far as the writer is aware, it has ever been noted before. At the present writing

I have no means of ascertaining how far north true *M. formicivorus* ranges, but take the bird now in my possession to be our *M. f. bairdi*. This evening I made a skin of this specimen, and in preparing it found no difficulty in passing the skin of the neck over the skull. I also noted that the epibranchials of the hyoid arches reached a point on the top of the cranium at an imaginary line joining the posterior peripheries of the outer borders of the orbits, in other words, no further forwards than the parietal region at the vault of the skull. When I do make skins of birds now-a-days, I have a habit of running a thread through a label giving full data in regard to the specimen, then pass the needle through the body, the eyes, and the back of the skull, all of which we have removed in making the skin, tie the whole in a bunch, and throw with others into a jar of fresh alcohol. It is a capital practice, saves excellent material, and was resorted to in the present instance.—R. W. SHUFELDT, *Fort Wingate, N. Mexico.*

Egg-laying extraordinary in *Colaptes auratus*.—On May 6th, 1883, I found in a large willow tree, a hole containing two eggs of this bird; I took one, leaving the other as a nest-egg, and continued to do this day after day until she had laid *seventy-one eggs*.

The bird rested two days, taking *seventy-three days to lay seventy-one eggs*. I think this is something very unusual; I have quite frequently heard of from fifteen to twenty-eight being taken from one bird, but this is a large number comparatively. I have the set complete, in my cabinet, and prize it very highly.

This was published in a small journal called the 'Young Oölogist', Vol. I, No. 2, 1884; but it being a rather obscure paper, and not reaching the general public, I concluded to send it to 'The Auk' for publication.—CHARLES L. PHILLIPS, *Taunton, Mass.*

The Range of *Quiscalus major*.—In the A. O. U. 'Check List' the habitat of the Boat-tailed Grackle is given as the "coast region of the South Atlantic and Gulf States, from North Carolina to Texas." The failure to assign a more northern limit of range is evidently an oversight, for the bird occurs as a regular inhabitant as far north at least as Cobb's Island, Virginia, about twenty-five miles above Cape Charles, and breeds in considerable numbers on certain of the marshy islands off the coast above the mouth of Chesapeake Bay. Mr. Robert Ridgway kindly informs me that during his visit to this region in July, 1881, he saw straggling flocks of this species almost daily, and killed several birds. They were moulting and in very poor plumage, and none were preserved. Mr. Ridgway further states that although he found no nests he has "no doubt these birds were, or had been, breeding either in the marshes on Cobb's Island or else on one of the neighboring islands." In July, 1884, I noticed the birds occasionally on Cobb's Island and on several of the islands adjacent thereto, and saw numbers of eggs that had been taken earlier in the season, chiefly on a small sparsely-wooded island, by the keeper of the U. S. Life Saving Station on Cobb's Island.—HUGH M. SMITH, *Washington, D. C.*

The Lapland Longspur about Washington, D. C.—My expectation of finding the *Calcarius lapponicus* in this vicinity was verified last winter. Dec. 11, while Dr. Fisher and I were riding along the road to Falls Church, and distant from Washington perhaps four miles, we saw a flock of fifteen or twenty Horned Larks by the road side. Scattered through the flock were half a dozen or more Longspurs, one of which was secured. Comparatively little collecting has ever been done about Washington in winter, and to this fact more than to its excessive rarity is due, I am persuaded, the absence of the species from the local lists. Although probably not a regular migrant, the species occurs here in small numbers, I am inclined to believe, during every hard winter. However, it is to be remarked that the records of this bird from so far south are very few. In Bull. N. O. C., Vol. VII, Jan. 1882, p. 54, Mr. Allen records the capture of a single individual in Chester, South Carolina, this being, so far as I know, the most southern record of its occurrence along the Atlantic coast.—H. W. HENSHAW, *Washington, D. C.*

Description of Two New Races of *Pyrrhuloxia sinuata* Bonap.—

1. *Pyrrhuloxia sinuata beckhami*. ARIZONA PYRRHULOXIA.

SUBSP. CHAR. Differing from true *P. sinuata** in decidedly browner and somewhat lighter tone of the gray, and greater extent of dark red on the tail; adult male with much less (often not any) blackish suffusion in the lighter carmine-red of the capistrum, and red of the crest much lighter; female with much less of a grayish tinge across chest and along sides; wing (♂) 3.60-3.90, tail 4.40-4.60, depth of bill .50-.52. *Hab.* Southern Arizona and New Mexico and contiguous portion of Northern Mexico. Type, No. 6370, U. S. Nat. Mus., ♂ ad., El Paso, Texas; Lieut. J. G. Parke, U. S. A. (Seventeen specimens examined.)

2. *Pyrrhuloxia sinuata peninsulæ*. ST. LUCAS PYRRHULOXIA.

SUBSP. CHAR. Similar to *P. S. beckhami* in color, but decidedly smaller, with larger bill; wing (♂) 3.30-3.60, tail 3.80-4.15, depth of bill .52-.55. *Hab.* Lower California. Type, No. 87547, U. S. Nat. Mus., San José, Lower California, Apr. 13, 1882; L. Belding. (Eleven specimens examined.)

The first of the above-described new races is named in honor of Mr. C. W. Beckham, who furnished the material enabling me to make a satisfactory comparison of specimens.—ROBERT RIDGWAY, *Smithsonian Institution.*

Helinaia swainsonii near Chester C. H., S. C.—About a mile distant from the eastern portion of the town of Chester a male Swainson's Warbler was shot by me, Aug. 30, 1887, on the bank of a small branch

* About 30 specimens examined.

in a hardwood thicket at the extremity of a large body of woods. This spot, which has scarcely an area of two acres, borders on the open country and on a constantly travelled public highway. The ground is largely free from lesser vegetation, having been swept bare during high water by the overflow from the stream. There is not anything in the immediate surroundings, or in the general vicinage, to suggest the 'pine-land gull' which figures so prominently in the descriptions of the haunts of this species in the Low-Country. The inland character of the place of capture, situate as it is on the water-shed between the Broad and Catawba Rivers, in the heart of the Piedmont Region, one hundred and fifty miles from the coast, renders this find one of special interest. While it establishes nothing definitely beyond the mere fact of the occurrence of a single bird—perhaps accidental—during the time of migration, it awakens the mind to the possibility of an Up-Country habitat, yet awaiting discovery, where the true centre of abundance will finally be located.—LEVERETT M. LOOMIS, *Chester, S. C.*

Another Bachman's Warbler in Florida.—Mr. J. W. Atkins, of Key West, Florida, writes me that on August 30 of this year, he collected a specimen of Bachman's Warbler (*Helminthophila bachmani*) in the outskirts of the town of Key West. He found the bird, a female, he writes, "feeding in the black mangrove trees that skirt the edge of a pond of an acre or two in extent, and was the only one I could find. It measures 4½ inches in length; wing, 2¼; tail, 2. Feet and legs brownish, soles of feet yellowish. Bill blackish, light below at base. Forehead yellow, and lacks the band of black given in Coues's description of the species. Throat yellow, then a black area occupying part of the throat and breast, succeeded behind by yellow, which in turn becomes whitish on the belly and vent. Sides of neck faintly yellowish. Top of head and hind neck ashy. Rest of upper parts olive, agreeing with Coues's description. Tail-spots very small and on the inner edges of the feathers. I think it is an *adult* female."—W. E. D. SCOTT, *Tarpon Springs, Fla.*

Additional Captures of *Helminthophila leucobronchialis*.—The specimens below recorded were taken at Englewood, N. J., in a densely thicketed, low, wet woods.

1. (Now in Coll. Dr. A. K. Fisher, No. 2646, ♀, May 15, 1886.) Rump and interscapulars as in *H. pinus*; wing-bars intermediate between *H. chrysoptera* and *pinus*. A yellow pectoral band and a slight suffusion of same color on the underparts.

2. (Coll. F. M. C., No. 903, ♀ ad., June 26, 1887.) Immediately after the capture of this specimen I was attracted by the voices of young birds, and a search revealed, almost directly overhead, four young being fed by a typical male *pinus*. For between four and five hours this family was closely watched, and the non-appearance of a female during that period renders it possible that the missing parent was the captured bird. Three of the young were taken, all typical of *pinus*, the fourth escaped me.

Taking into consideration the fact that the female is in worn *breeding* plumage, the abdomen being denuded of feathers, it may be said to agree with the type of *leucobronchialis*. Why not consider these typical birds as the *ultimate* result of a union between *pinus* and *chrysoptera*, achieved by series of unions between the original hybrids with themselves or either of the parent species, in which both black and yellow are finally eliminated?

If this be true the intermediate specimens should outnumber the typical ones, and we have recorded, therefore, twenty-one birds approaching *pinus* and *chrysoptera* more or less closely and but eight agreeing with *leucobronchialis* as originally described.

3. (Coll. F. M. C. No. 932, ♂ im., July 31, 1887.) Dorsal surface and wing-bars as in *pinus*, with an extremely faint grayish cervical collar. Breast yellow, a flush of the same appearing on the white of the throat and abdomen. Taken within less than one hundred feet of the place where No. 903 was secured. The migration of *pinus* had not yet commenced, and this bird, which was undoubtedly born in the vicinity, would answer admirably as the missing fourth bird of the brood before mentioned.—FRANK M. CHAPMAN, *American Museum Natural History, New York City.*

Helminthophila leucobronchialis in New Jersey.—May 15, 1887, a fine male specimen of this bird was shot near this place. It differs from the type in having a spot of lemon yellow on the breast and being washed lightly with the same color on abdomen and back.—E. CARLETON THURBER, *Morristown, N. J.*

The Canadian Warbler breeding in Pike County, Pa.—On June 9, 1887, in the mountains of Pike County, Pa., I was fortunate enough to find a nest of the Canadian Warbler (*Sylvania canadensis*), containing four young birds and one unhatched egg. The nest was placed among the roots of an old stump and was well concealed from observation by weeds and grasses. It was constructed of small twigs, leaves, and grasses. The egg which I secured measured .71 × .53 of an inch and corresponded with the description given in Baird, Brewer, and Ridgway's 'History of North American Birds,' the ground color being white with dots and blotches of blended brown and purple, varying in shades and tints and forming almost a wreath around the larger end. Both parent birds were seen and fully identified.—ROBERT B. LAWRENCE, *New York City.*

On the correct Subspecific Title of Baird's Wren (No. 719 b, A. O. U. Check-List).—In their 'Biologia Centrali Americana,' Aves (1879), p. 96, Messrs. Salvin and Godman very properly change the current name for this form of Bewick's Wren (*Thryothorus bewickii leucogaster* Baird), their reasons for so doing being thus explained:

"In differentiating these races [of *T. bewickii*], Prof. Baird thought that he recognized in the Mexican bird the *Troglodytes leucogastra* of Gould, and hence properly called it *Thryothorus bewickii*, var. *leucogaster*. But Mr. Gould's name has since been found to apply to a very different

species, which now stands as *Uropsila leucogastra*. This being the case, it is obviously undesirable to retain the name *leucogaster* for the present bird as well as for the *Uropsila*; we therefore suggest that the form should stand as *Thryothorus bairdi*."

It seems, however, that the Mexican form of Bewick's Wren had previously been accurately described by Dr. Hartlaub as *Thryothorus murinus*, in the 'Revue et Magazin de Zoologie,' Vol. IV, 1852, p. 4, a translation of the description being as follows:

"Above pale brownish cinereous, the pileum more brownish; a long, narrow, and sharply defined superciliary stripe of white; parotic region streaked with white; feathers of lower back and rump with partially hidden ante-apical spots of white encircled by black; primaries (except the first) and secondaries, for their basal half slightly, and tertials more distinctly, barred; two middle tail-feathers concolor with the back, barred with blackish; the two next blackish, with whitish tips, the rest with outer webs more and more spotted with whitish, the outer with tip entirely whitish; under tail-coverts white barred with black; body beneath pale ashy, more whitish medially, the chin and throat purer whitish; breast washed with the color of the back; feet blackish, bill brownish; tail graduated; second to fifth quills subequal. Length,* 5.40; bill from forehead, .65; from rictus, .77; wing, 2.30; tail, 2.40; tarsus, .85. *Hab.* Mexico: Rio Frio. Museums of Bremen and Hamburg."

The only Mexican species which have the peculiar pattern of the tail-feathers described above are *T. bewicki* (subspecies "*bairdi*" Salv. & Godm. and *spilurus* Vig.) and *T. albiucha* (Cabot). The latter is of very different proportions, however, and is, moreover, confined to Yucatan and the Peten district of Guatemala. Therefore, since the description cited applies very exactly to the bird first named *Thryothorus bewicki*, var. *leucogaster* by Prof. Baird, and afterwards *T. bairdi* by Salvin and Godman, it appears necessary to discard both these appellations for that given earlier by Hartlaub, the correct name of Baird's Wren thus being *Thryothorus bewickii murinus* (Hartl.).—ROBERT RIDGWAY, *Smithsonian Institution*.

Central New York Notes.—HENSLOW'S SPARROW (*Ammodramus henslowi*). An adult male of this bird was taken by me near Syracuse, on June 30 of this year. Attention was drawn to the bird through its peculiar song, delivered from a tall weed in a field.

ORANGE-CROWNED WARBLER (*Helminthophila celata*). Oct. 2, 1886, I shot a young female near Syracuse, as it was following a small company of Golden-crowned Kinglets.

COMMON TERN (*Sterna hirundo*). Secured an adult female August 12, 1887, on Onondaga Lake.

SANDERLING (*Calidris arenaria*). I have a female of this bird, taken by a friend, Aug. 12, 1887, on Onondaga Lake.—MORRIS M. GREEN, *Syracuse, N. Y.*

*The measurements are reduced from French inches and decimals to English inches and decimals.

On the Westerly Trend of Certain Fall Migrants in Eastern Maine.—In investigating the influence of the topography of the land upon the flights of migratory birds, an interesting point is to ascertain to what extent the more prominent physical features of a region determine the direction of these flights, and especially is this important when great natural barriers deviate in their line of extent from the general north and south trend of the paths of migration. During a limited collecting experience of two years in the vicinity of the St. Croix River, a few facts seemingly bearing on this subject have come under my notice. I frequently came in contact with some of those species that perform their migratory journeys during the day, and one circumstance that struck my attention was, that in their fall migrations they all appeared to be flying directly *west*. At first I thought it to be merely a fortuitous circumstance, but repeated observation convinced me that there must be something more in it. I have noted it most frequently in the Swallows and Swifts, and very often in the Nighthawks, and my friend, Mr. Howard H. McAdam, informs me that he has observed this westerly movement in some Hawks when migrating in flocks.

In the case of the water birds, the surrounding country is so cut up by lakes and rivers, that their evidence, unless very accurately taken, is unreliable. Mr. William Brewster, in his account of his observations on the small, night-migrating birds at Point Lepreaux light-house ('Bird Migration,' Memoirs of Nuttall Club, No. 1), states that on leaving the light they always proceeded due *west*.

The question involved is this: Whether the birds inhabiting Maine, New Brunswick, and the country further northward, proceed directly south in their autumn journey until they reach the coast line, and then massing upon the coast, take their course westward until they can again continue directly south; or whether they pass across this territory in a westerly or southwesterly direction *from the first*, holding such a course until they reach the first great migration route tending directly south. My own observations being made only from thirty to fifty miles from the sea, would have little weight, even if more thorough, but I note my experience in order to call the attention of other field workers to a point that would be of some interest to determine, and with the hope that someone else may have had a similar experience.—LOUIS M. TODD, *Calais, Maine*.

A Bird Scare.—At half-past three o'clock on the morning of the 26th August, I was awakened by a noise which I had some difficulty, in my drowsy condition, in making out. I first thought it was from heavy drops of rain on the zinc floor of a balcony outside of my bedroom—such drops as precede a thunderstorm—and I lay back to sleep again. The noise continued, and I then knew it was caused by some objects flying against the windows. There is an electric lamp on a level with the middle of the window and only thirty feet away, and I thought it might be some unusually large moths striking against the glass. The noise was so irritating that sleep was out of the question, and I got up and went to the

window. The upper sash was down about 18 inches, and when I opened the inside Venetians a bird flew in. I saw some others flying against the glass, and throwing up the lower sash of the window I stepped on the balcony and easily caught two birds—all that were there then. At another window at the head of my bed I heard at least one bird, but I could not easily reach it, and it soon went away or dropped to the ground.

I placed the two I had caught under a glass shade, where they continued their fruitless efforts against the glass until I covered it up with a dark colored cloth. The bird in the room kept up an incessant fluttering against the walls and ceiling and eluded me completely. At daylight I noticed the ceiling streaked on the window side with blood—some two or three hundred marks altogether, from two inches long and three-eighths of an inch wide down to almost imperceptible dots. With the aid of a friend I secured the poor little frightened thing and put it also under a glass shade, first compelling it to swallow some water. It was a Tennessee Warbler, and the feathers and skin were completely torn off its head and showed a large and nasty wound already dry and healing. When taking it out in the afternoon to try and feed it, for it would eat nothing I put under the shade for it, it got out of my hand and again flew about the top of the room. At four in the afternoon I let the two under the shade out, and one found its way to the open window and flew a couple of hundred yards, when it got beyond my sight. The other joined the Warbler, but neither would fly low enough to get out at the top of the windows. Neither flew so as to hurt itself. At last the smaller bird got out, but the Warbler did not follow it. I left the windows wide open and when I came back, just before dark, it was gone. They were all this year's birds, the two caught on the window being Flycatchers—one quite young with the down still showing between the feathers, but flying well.

It turned out that during the night a general scare of birds had taken place, and I was asked all sorts of questions on the subject. A number of birds were brought to me to be identified. Some were rare visitors here—the Hermit Thrush, for instance. I was handed a pretty specimen of the Golden-crowned Thrush, but the crown was marred by a ghastly wound on which the blood was still fresh; in trying to escape from the hand its whole tail came out. It flew about the room, this was the 27th, until evening when it at last went out at the window.

On the evening of the 26th I took a walk to my friends, the taxidermists, and I learned from them that they had been offered large numbers of birds during the day by small boys who had caught them on the streets or on hawthorn bushes. One little fellow saw the birds during the day falling off the bushes exhausted. They flew in a circle and were quite dazed. One man said he counted fifty dead birds lying against the wall of a building as he walked past. During the night the 'Free Press' premises were invaded by them until the windows had to be shut. Through this paper I asked for information as to where the scare originated, but so far no one has replied.

My own opinion is that the birds were overtaken while roosting by a

forest fire fanned by a southern breeze; that in their stupor, their instincts teaching them at the time of fear to fly south if anywhere, they flew into the smoke and got suffocated and frightened. No doubt thousands lost their lives and fell into the flames below. The survivors then flew away from the fire, and coming over this city were attracted by the electric lights and flew madly against the walls of buildings. At the Queen's Hotel, where the windows also had to be shut, there is a light as well as at the 'Free Press.' Two years ago a similar stampede was reported in one of the Southern States, but of Ducks alone. They flew in hundreds against the electric masts, and then against buildings. Our lights are on poles only 25 to 30 feet high.

The birds were all small and most of them of this year. Among those picked up or caught were the Redstart, the Black-and-white Creeper, the Tennessee Warbler, the House Wren, Flycatchers, the Hermit Thrush, the Golden-crowned Thrush, and the Chestnut-sided Warbler. The last is a rare visitor here. Small Sparrows, I am told, had been found, but I am not sure of this.

Mr. W. Hurd, our taxidermist, saw next day a Thrush flying along Main Street diagonally and only about two feet above the ground. The birds were all weak, but many, like those which struck my windows, evidently recovered, at least their senses. All were stupified, and many had wounds evidently caused by barbed wire.

In skinning the birds for preservation Mr. Hurd failed to notice anything which could have caused death; the various organs appeared sound and healthy, though the birds were rather small for him to be very certain regarding all of them.

I should have mentioned that the forests were on fire some eight miles south of the city.—ALEXANDER McARTHUR, *Winnipeg, Manitoba.*

CORRESPONDENCE.

[Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.]

The Dermo-Tensor Patagii Muscle.

TO THE EDITORS OF THE AUK:—

Dear Sirs:—In this letter the writer proposes to reply to a criticism of Leonhard Stejneger, which appeared in 'Science' August 5, of an account of mine of a muscle which is present in certain birds, and which I designated by the name entitling this communication.

To those who are aware of the conditions under which I prosecute my anatomical work no word need be said; my labors in the myology of

birds were chiefly inaugurated and have been pursued during a time while their author found himself removed by several thousand miles from the libraries wherein may be consulted the works of the older anatomists. Under these circumstances my guides have been the general works of Owen, Huxley, Garrod, Mivart, Parker (T. J.), Forbes, and others of similar standing; several of these writers have given very exhaustive accounts of the myology of birds, but none of them, so far as I have been able to discover, have described the muscle in question.

This being the case I was intentionally guarded in my letter to 'Science' (No. 229), and said the dermo-tensor patagii "was a muscle for which at this moment I recall no published description" (p. 624), and by no means proclaimed it a "new discovery," although, so far as I am concerned, it has certainly proved to be an independent observation, but I fail to see that it is any the worse for that circumstance. This answers the first objection to my account made by Dr. Stejneger. Secondly, he charges me with "supposing that it is peculiar to the true passerine birds," when I, in my letter, distinctly said that "I had investigated the matter in but a limited number of birds" and would "look with interest for such future researches that might be made in that direction by others" (p. 624).

Any structural difference in such a group of vertebrates as birds is always to be welcomed, and as the muscle is evidently present in some and absent in others, I still maintain "that it is of taxonomical value," perhaps of greater value than did the authorities whom Dr. Stejneger pleases to quote to me,—dissectors, as a rule, who did not especially look into the structure of birds with the view of determining their affinities as Garrod did, and consequently would naturally not realize the importance to avian classification of such a muscle, were it even a new discovery to them.

Throughout the entire second paragraph of Dr. Stejneger's letter, I am, as it were, directly charged with doing Professor Garrod a "great injustice," and "grossly misrepresenting" him, as if that were the sole aim of my original description; whereas those who may be familiar with my writings in anatomy, know full well that in the many, many instances wherein I have been called upon to allude to his work or name, it has always been with the greatest amount of regard, a regard which I ever sincerely feel, and which is ever increasing as I more fully appreciate the power and force of the work he was enabled to leave us in his only too short career.

The dermo-tensor patagii was entirely absent *on both sides* in the specimen of *Tyrannus tyrannus* which I dissected, and I even went so far as to bring the dissection under a powerful microscope (one inch objective); there was no muscular tissue present, and, as I say, further than that I have not investigated the matter, nor, just now, do I intend to do so, as other anatomical work is engaging my attention.

In closing, perhaps I may be permitted to point out a few of the errors which Dr. Stejneger has unfortunately allowed to creep into his letter of criticism, and more especially into the figures which he published in

'Science' (No. 235) to show me how it ought to be done. These figures (Figs. 1 and 2, p. 71) Dr. Stejneger informs us are "both of one-third natural size"; if this be so their author is laboring under the impression that *Colaptes auratus* has a head nearly *five inches* long, and everything else in proportion, to say nothing of the dimensions *Amazona* would attain under the statement in question! And, may I ask, how long since do we see upon "dorsal view" of a dissected *Colaptes*, the tips of the shoulder in close anatomical connection with the *side of the middle of the neck?* (See his Fig. 1.) Turning to his "dorsal view" of a dissection of the patagial muscles of a Parrot (*loc. cit.*, Fig. 2), this latter error is again repeated, but a far more glaring one here confronts us, for, among other faults, Dr. Stejneger has plainly drawn and lettered his biceps muscle, and would have us believe that it is inserted into the *extensor metacarpi radialis longus*, between the tensor patagii brevis and the humerus. It seems to me on an occasion of this kind, and where the opportunity presents itself to have two new figures added to anatomical science, it is fortunate for us when they prove to be useful ones; such is by no means the case in the present instance, and the true aims and accomplishments of criticism have herein failed in Dr. Stejneger's hands. Upon carefully reconsidering my last letter to 'Science' upon this subject I am at loss to find anything requiring any alteration, nor any adequate reason for changing the name I have given the dermo-tensor patagii muscle; indeed, in the latter instance, I am in full sympathy with Professor Elliott Coues, who has recently, and in the most forcible manner ('N. Y. Med. Record'), shown that the terminology of muscles requires a through reviewing, and the day is with us when we ought, for the sheer sake of clearness and convenience, to lay aside some of the abominable names the old anatomists bestowed upon some of them, and in some instances where the name was five times as big as the muscle.

From this standpoint I think Dr. Stejneger can consider the "pars propatagialis musculi cucullaris" of Fürbringer and Gadow as the dermo-tensor patagii of the present writer.

R. W. SHUFELDT.

Fort Wingate, New Mexico,
August 14, 1887.

POSTSCRIPT:—A description of the above muscle was published by the writer in 'Science,' some little time ago (No. 234, July 29, '87), and it called forth, it seemed to me, rather an acrimonious protest from Dr. Leonhard Stejneger in the same journal. That writer so misrepresented the entire matter, that I felt his criticism really required some notice from me, and the above reply was sent to 'Science.' but much to my surprise, the editor of that paper objected to my defending myself in its columns against a criticism which he saw fit to publish. Will 'The Auk' kindly do this matter justice for me, and insert the above rejoinder?

By the first of next month (Oct. 1, '87) I trust to have out a paper covering a description of all the muscles thus far used in the classification of birds, and in it will be given a full account of the present one. Even

until now I have had no time to further investigate this interesting structure, but will briefly remark here that I found it present, *i. e.* the *dermo-tensor patigii* muscle, in all the Acromyodian Passeres that I have thus far examined, and it was *entirely absent* in an alcoholic specimen of *Tyrannus tyrannus*, kindly supplied me by Mr. H. K. Coale, President of the Ridgway Ornithological Club of Chicago.

I introduce two figures here showing the absence and presence of this muscle on the occasion I examined it.

It is quite possible that this muscle may exist in other birds. I have nowhere stated that it does not, so far as I can remember. But I will say

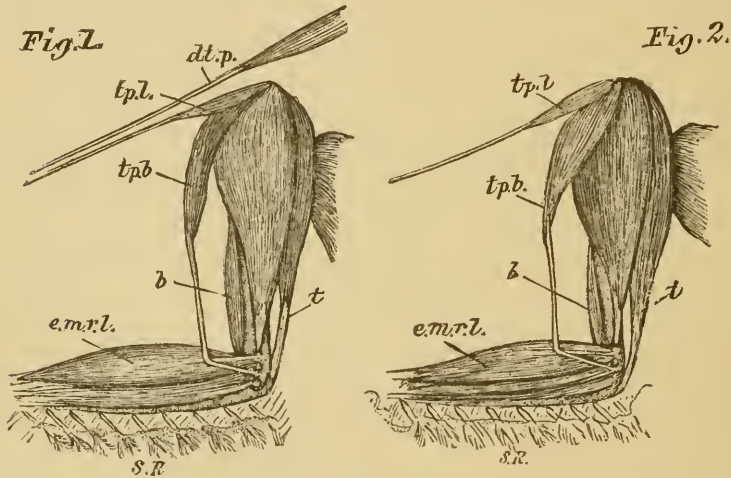


FIG. 1. Outer aspect, right arm of *Xanthocephalus xanthocephalus*, showing a dissection of the muscles of the region in question.

FIG. 2. The same of *Tyrannus tyrannus*; slightly enlarged. Both figures drawn by the author from his own dissections. *dt. p.*, dermo-tensor patagii; *tp. l.*, tensor patagii longus; *tp. b.*, tensor patagii brevis; *b*, biceps; *t*, triceps; *e. m. r. l.*, extensor metacarpi radialis longus; *S. R.*, secondary remiges.

that if it is constant for the Acromyodian Passeres, and absent in the Mesomyodian Passeres, the fact will constitute a taxonomic character of value. If it is subsequently found to exist in both, a complete examination of it in our American birds will be a good thing; I do only insist that I found at least one Kingbird wherein it was entirely absent, and that it was present in a long list of Oscines.

With these few brief remarks upon the subject I close the case for the present, with the hope that other dissectors with good eyes will look into the matter. But if you illustrate your work, let us, gentlemen, have intelligent drawings.

Very faithfully yours,

R. W. SHUFELDT.

Fort Wingate, N. Mexico,
13th Sept., 1887.

A Protest.

TO THE EDITORS OF THE AUK :

Sirs:—Having waited until the last moment for the return of Mr. Lucas, who has been absent from the United States since the first of July and thus unable to speak for himself, I wish to enter a respectful but most earnest protest against Dr. Shufeldt's shameful slur on him, printed on page 265 of the last number of this journal. Whatever may be the custom in that part of the world from which Dr. Shufeldt wrote his letter for the July 'Auk,' it is not customary in most places for a person when fairly beaten in an argument to attack the honesty of his opponent with a cry of fraud. The reckless manner in which Dr. Shufeldt flings an untruth at his critic, and then declares that he will not re-open his "case" under any circumstances, might be amusing, perhaps, if both parties to the "case" were children; but in the present instance it is simply contemptible. Mr. Lucas had a right to expect better treatment, especially after the courtesy which he has invariably accorded Dr. Shufeldt, even when, as in the present case, the latter has been obviously and obstinately in error. As Mr. Lucas has already accomplished (*Science*, July 1, 1887, p. 12) what Dr. Shufeldt preferred merely to talk about, namely, the publication of a true copy of Dr. Shufeldt's original figure side by side with his (Mr. Lucas's own tracing of the same) which Dr. Shufeldt claims was purposely mutilated to support a theory), no shadow of this unjust reflection remains where it was so ungenerously cast; and if it envelops its originator it only verifies the old proverb about curses and chickens. It is naturally unpleasant to acknowledge a mistake, but it is not likely to become easier the longer it is delayed. Even silence is preferable, however, to the attempt to defend an untenable position; and when such defence becomes incompatible with strict honesty, common sense allows a man but one course.

I feel that no apology is needed for calling attention to this matter now, for the principle violated lies at the very foundation of all science, and its general disregard would make utterly impossible that interchange of ideas which now constitutes the brightest hope of American ornithologists.

Very respectfully,

WALTER B. BARROWS.

Washington, D. C., August 31, 1887.

The Metric System.

TO THE EDITORS OF THE AUK :—

Sirs: In 'The Auk' of April, 1884, Dr. Merriam presented 'A Plea for the Metric System in Ornithology,' which was editorially endorsed, and a request made asking "all contributors to the pages of 'The Auk' to give their measurements in the metric system."

Since then a few have done so, most of the writers have not, and each issue adds to the burden of inches and hundredths.

Why has not the change been made?

Will you through these pages kindly shed some light on the subject and thus bring it to the attention of the A. O. U.?

It seems desirable to have some fixed arrangement for the convenience of all.

The choice in this locality appears to be for the metric system.

WILLIAM FLINT.

Oakland, Cal.

NOTES AND NEWS.

SPENCER FULLERTON BAIRD died suddenly at Wood's Hill, Mass., August 19, in his sixty-fifth year, after suffering for many months from seriously impaired health. In his death American ornithology has lost its time honored leader, and zoölogical science one of its most powerful and unselfish promoters. Although occupied during the later years of his life with engrossing executive cares attending two of the most important positions of scientific responsibility to which a naturalist could be called—those of Secretary of the Smithsonian Institution and head of the United States Fish Commission—his impress upon American zoölogy is perhaps unequalled by that of any other naturalist, living or deceased. His published works on the mammals, birds, reptiles, and fishes of North America were for a long period of years the standard authorities of the subject, and will always hold the place of classics. His influence upon the progress of ornithology in America is beyond comparison, his work of thirty years ago forming the basis of nearly all subsequent advance. But his influence was by no means restricted to his published writings, he having been the instigator and organizer of ornithological explorations extending throughout the North American continent. To his influence with the government authorities is due the excellent field work done in connection with nearly all the Government Surveys and the Signal Service Bureau, from the first inception of the various Pacific Railroad Surveys to the present time. The immense resources thus gathered into the National Museum have rendered possible the rapid progress in our knowledge of North American birds which has especially marked the last two decades.

In Professor Baird every rising naturalist has found a friend, ever ready to render all possible assistance and encouragement. Many owe to him opportunities for prosecuting distant explorations, or the material for monographic work. His one object, to which he was most disinterestedly devoted, was the advancement of science, and every effort to that end was sure of his generous encouragement. To the American Orni-

thologists' Union he was ever a friend, giving it from the first his hearty support, and rendering, as one of its Councilors, efficient aid in directing its affairs.

At the meeting of the A. O. U., soon to be held in Boston, a memorial address will be delivered by one eminently qualified to speak of his scientific work and worth. This address will doubtless be published in the next (January) number of 'The Auk,' rendering further notice of our great Nestor unnecessary in the present connection.

THE Fifth Congress of the American Ornithologists' Union will convene in Boston, Mass., Oct. 11, 1887. The meetings will be held in the Lecture Room of the Boston Society of Natural History. The presentation of ornithological papers will form a prominent feature of the meetings, although other important matters will come up for action. A large attendance of both Active and Associate Members is anticipated.

OWING to continued ill health and the pressure of other engagements, the present editor of 'The Auk' finds himself compelled to sever his editorial connection with this journal with the close of the present volume.

THE Index to Vol. IV of 'The Auk,' owing to unexpected and unavoidable delay in its preparation, is necessarily omitted from the present number. If not issued separately within the next few weeks, it will accompany the number for January, 1888.

FOR the portrait of the late Professor Baird, forming the frontispiece to the present number, 'The Auk' is indebted to the generosity of Prof. G. Brown Goode, through the solicitation of Dr. Coues.

IT HAS been proposed to erect a monument in New York City in memory of John J. Audubon, in connection with the removal of his remains from an old family vault in Trinity Cemetery, rendered necessary by proposed street alterations. A plot of ground has been offered for the purpose at the head of Audubon Avenue. The matter has been recently mentioned in 'Science' and other journals, and a resolution endorsing the project was adopted by the American Association for the Advancement of Science at its meeting recently held in New York. The subject is one in which it becomes ornithologists to take a lively interest.

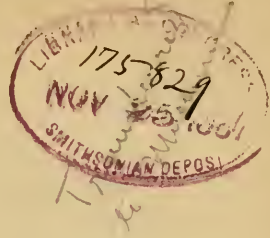
MR. MONTAGUE CHAMBERLAIN, of St. John, N. B., has sent to the printer 'An Annotated Catalogue of the Birds of Canada.' The 'Catalogue' will include the whole area of Canada, from the Atlantic to the Pacific, and north to the Arctic Coast. Its publication may be looked for early in October.

As is well known, Dr. Edgar A. Mearns, U. S. A., stationed at Fort Verde, Arizona, is making extensive natural history explorations in Ari-

zona, the ornithology of the region receiving special attention. During the past summer he has been able to make several extended and very successful expeditions into the more unexplored parts of the Territory, including the Matatzal and Mongollon Mountains. Large shipments of specimens received from him at the American Museum of Natural History attest his industry and success. He intends later to make them the basis of elaborate papers, giving the results of his several years' natural history work in the Territory.

THE Report of the Ornithologist to the Department of Agriculture, Dr. C. Hart Merriam, for the year 1886, which has recently come to hand, not only reviews the work of the year, but contains what may be considered as a preliminary report of extended investigations upon the House Sparrow (*Passer domesticus*). The results stated are of startling importance and suggestiveness. The report gives a brief history of its introduction, rate of increase, method of diffusion, and its destructive proclivities. An accompanying map shows its distribution in the United States at the close of the year 1886, when the area occupied by it is given as 885,000 square miles in the United States and about 148,000 square miles in Canada, or a total of 1,033,000 square miles over which it has spread in North America, mainly during the present decade. It now has overspread not only all the region east of the Mississippi River, except a narrow border along the Gulf Coast, but nearly all of Missouri, a large part of Kansas, Iowa, and considerable areas in Nebraska, Minnesota, Utah, and California. It proves to be not only an enemy of several of our most valued song birds, but exceedingly injurious to the gardener and fruit grower, especially grape-culturists, and also extends its ravages to grain fields. It proves to be not only a complete failure as a destroyer of insects, but is charged with actually causing an increase of one of our most noxious caterpillar pests. Many abstracts of testimony on these points, from many and widely distant sources, are given in the Report, which submits a series of recommendations to legislators, and to the people in reference to the Sparrow question. To quote from the Report: "The English Sparrow is a curse of such virulence that it ought to be systematically attacked and destroyed before it becomes necessary to deplete the public treasury for the purpose, as has been done in other countries. By concerted action, and by taking advantage of its gregarious habits, much good may be accomplished with little or no expenditure of money." Methods are then suggested for its destruction.

The ravages of the Rice-bird (*Dolichonyx oryzivorus*) in the rice fields of the South are then detailed, these involving, it is estimated, a loss of millions of dollars annually to the rice-growers.



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ERRATA.

Page 57, last line, for "Professor Baird" read Mr. Ridgway.

" 128, last line, for "*Vireo flavifrons alticola*" read *Virco solitarius alticola*.

" 138, line 13; page 142, line 8; page 143, line 5; page 215, line 14; and page 220, line 36, for "*A. ruficollis tricolor*" read *A. tricolor ruficollis*.

" 183, line 16 from bottom, for "about 240" read 253.

" 245, lines 13 and 16, for "*Euethia*" read *Euethia*.

" 271, line 4 from bottom, for "Mrs. Robert E. Stuart" read Mrs. Robert L. Stuart.

" 276, footnote, for "page 22" read page 222.

" 318, line 10, for "*Phyacophilus*" read *Rhyacophilus*.

For other *Errata* see p. 284.

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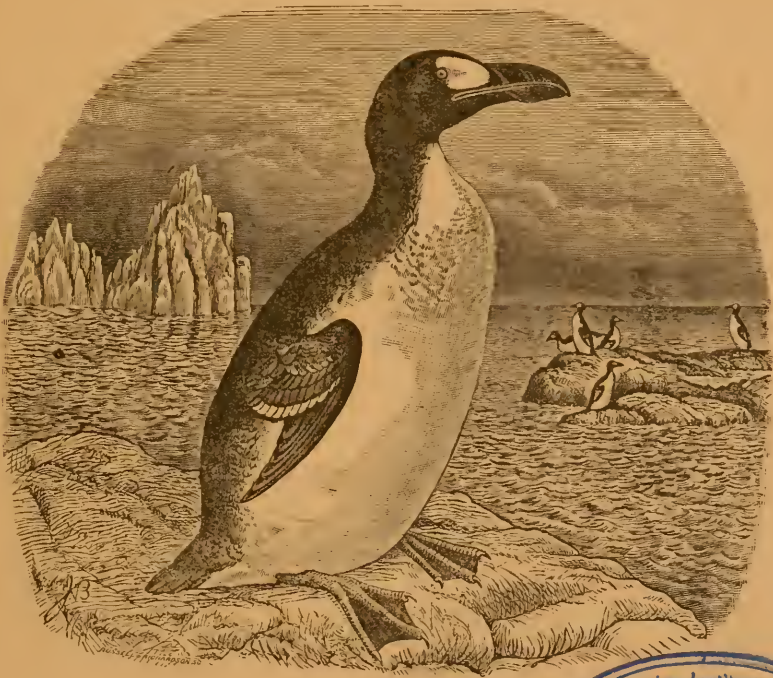
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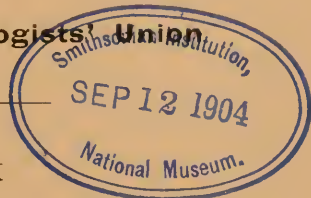


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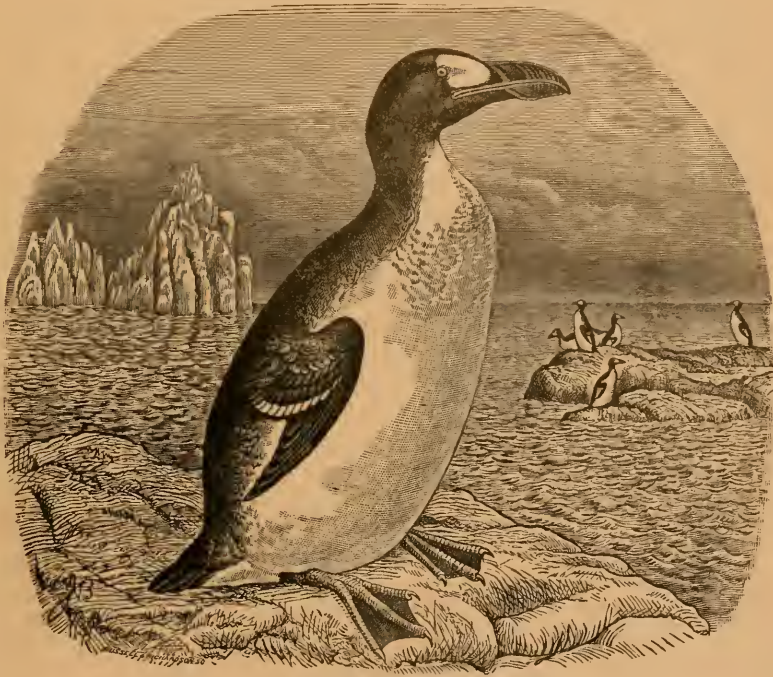
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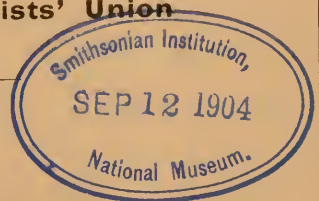


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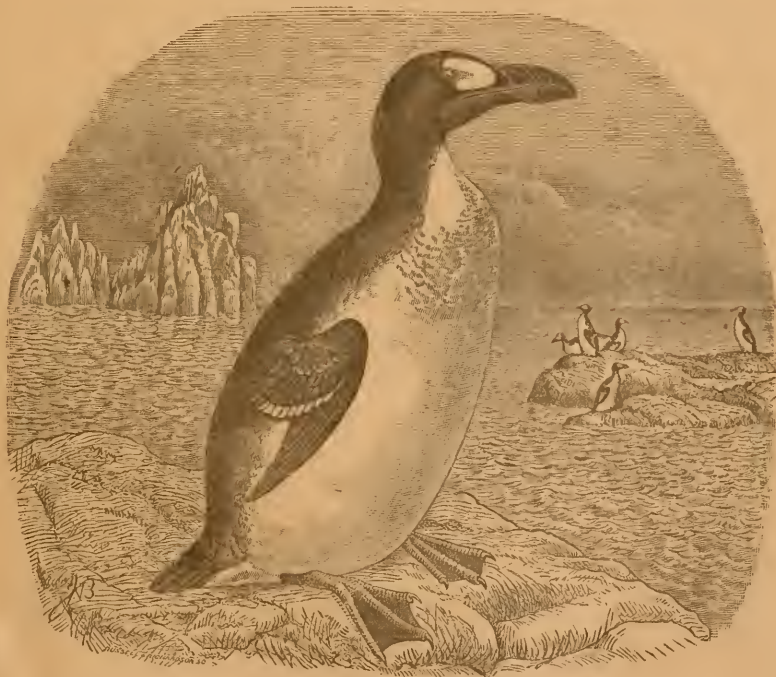
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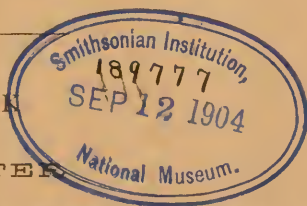


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