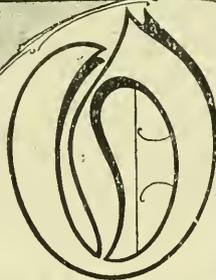


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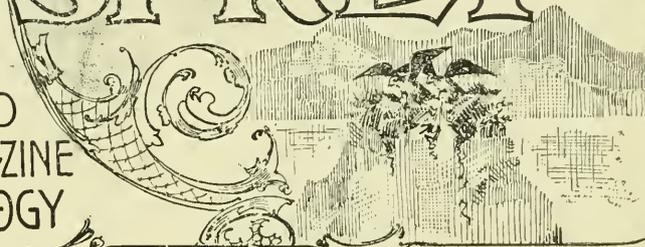
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The
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Original Articles.

FAMILIAR BIRDS OF HONOLULU, HAWAIIAN ISLANDS.

BY MILTON S. RAY, San Francisco, Cal.

Although some years ago several species of native birds were common about the City of Honolulu, they are now seldom seen, with the exception of the Gallinule, Owl and Plover. Of these the Gallinule (*Gallinula sandvicensis*) is the most abundant, inhabiting the marshes above Honolulu and Pearl Harbor. A legend is told of it to account for the red patch on its forehead. It was supposed to be the originator of fire, and the natives long sought to discover the secret. One day it was found attempting to extinguish some burning embers, but the effort resulted in a patch being burnt on the head.

Although formerly quite numerous, the Short-eared Owl (*Asio accipitrinus*) is now but occasionally seen. This bird has an extended geographical range, being found in North America, Europe, Asia, and most of the Pacific islands as far south, it is said, as the Gallapagos group.

The Plover (*Charadrius dominicus fulvus*) frequents the beach and marshes.

The *Vestiaria coccinea*, whose crimson plumage was extensively used in making feather pa'us (the royal robes of the Hawaiian,) is now only found in the mountains, although Prof. W. T. Brigham saw them several years ago in the city.

Among introduced species the Maina (*Acridotheres tristis*) from India is the most conspicuous. This bird practically runs the town. It has a cruel and quarrelsome nature, frequently driving the Pigeons from their cotes to build its own nest there. Another favorite nesting-place is on the platform above the arc lights of the town, and the nest material dropping down and interfering with the lights, the linemen delight in destroying them. It also builds in crevices of cliffs, papia, palm and cocoanut trees, often at a great height. But a nest found on March 17, 1898, was in a cocoanut tree only 8 feet from the ground. It was placed among dead bark, and was made principally of twigs, together with

paper, rags and other rubbish. The eggs, five in number, are light green, and average 1.12 x 0.87. On one occasion I observed a Maina endeavoring to fly away with a full sheet of a newspaper, the flapping of her wings against it making a great racket; and only after several attempts did the bird give it up.

Another common bird is the Eastern Turtle Dove (*Turtur chinensis*), brought from China, which has increased rapidly, as firearms are seldom used. It seems to prefer as nesting sites groves of algerobas on the hillsides. The algeroba is an introduced thorny tree—so thorny, in fact, that to reach a nest about ten feet up is difficult. Up to March 25th all nests I examined contained fresh eggs. They were built of rootlets and weed stems, and placed from 10 to 30 feet from the ground.

Two species of herons from China, the House Finch, California Partridge, Java Sparrow, Pheasant, Rice-bird, and the ever-present House Sparrow (equally at home among tropical foliage and in the dust and dirt of our city streets) complete the list of introduced birds.

It is said there are no reptiles on the island,* but had the two live snakes been liberated which Prof. Brigham informed me he found in a bale of hay from California, this would not be so. He promptly dispatched them, however, as he did not consider their introduction desirable. Two Cockatoos suffered a similar fate as they would be very destructive to the fruits of the Island.

While following up a rivulet in the mountains one day, I was surprised at the absence of animal life. Here, along this clear sparkling stream shaded with palm, kukui, guava, lime and other tropical trees and abounding with insect life, it seemed a veritable paradise for birds. This scarcity is no doubt due to the former custom of the natives who, in order to decorate themselves, nearly exterminated them.

*Although the class of reptiles is not represented by any snakes in the Hawaiian Islands, no less than seven species of lizards—four Geckos and three Skinks—occur in the archipelago. These have been described in a very recently published monograph of "The Land Reptiles of the Hawaiian Islands by Leonhard Stejneger" (Proc. U. S. Nat. Mus., xxi, 783-813).—Editor.

EIGHT DAYS AMONG THE BIRDS OF NORTHERN NEW HAMPSHIRE.

By JOHN N. CLARK.

The naturalist, like other people, will tire at last of sameness; after seeing for successive seasons, only the same woods and fields, the same birds and nests, the same trees and flowers, and hearing the same songs, the identity may become to some extent monotonous, and the longing for change almost irresistible. Yet with most of us the ties of nature and business seem hard to break, though the facilities of travels overcome many seemingly insurmountable obstacles, and a day's ride will bear one so far, that the changes are marvelous. Thus from the shores of Long Island Sound at eight o'clock in the morning was I borne away, and at nine in the evening was under the shadow of Mt. Washington, whose summit shone before me the following day (the first day of June) crowned with snow.

Wonderful were the change that confronted me, as I wandered in the shadows of the lofty maples in that land of sugar camps, with the ghastly pillars of white birches towering equally high; or in the gloom of the dense forests of spruce and fir, which were everywhere, high and low, in field and forest, covering hill and valley, as shrubs, bushes, or trees, and all these had been known to me hitherto only as ornaments of the lawn at home. There were massive oaks and chestnuts towering aloft, or the Laurel and Clethra, and Smilax below that crowned the hills, and covered and tangled the valleys at my Connecticut home, and none of the Pink Azaleas that painted there both hill and vale, but here were painted spots, acres in extent, where bloomed the Pinxter flower in wondrous profusion and beauty, as bright as the Azalea and Laurel at home.

But the birds were the special attraction that drew me to these mountains and valleys, and I was awake, to catch their first salutation of the opening day, and what should it be but "*Chebec*" the very bird that nested under my bedroom window at home, and devoted himself to showing how many times in each day he could repeat his own name. That note sounded homelike, and when a Robin, a Chippy, and a Warbling Vireo joined the chorus, it was difficult to realize oneself so far away from home. I soon found that I had to run away from all my old acquaintances; the Vesper and Song Sparrows, the Bobolinks, the Kingbirds, the Barn Swallows, and House Martins were, if possible, even more abundant than in Connecticut; but it was the *new* notes that I had come to hear, and I had scarcely reached the first grove, when their salutations greeted me. The first was the White-throated Sparrow, which I really thought at first a farmer's boy with his willow whistle, and even when the notes seemed to wake up in every quarter, I could scarcely banish the thought of a party of school boys with whistles all pitched to the same key. I found these birds very abundant, nesting on the ground, in the grass, the brush, the bushes, everywhere in the swampy openings of the woods, and *everything was* swampy, with scarcely a spot in field, or pasture, or woodland, without little pools or trickling

streams, making rubbers an absolute necessity. These pools were the key to the ornithological situation, filled as they were with the larvae of the innumerable host of insects that swarmed everywhere, among which mosquitoes held an uncomfortable proportion. These insects attracted and fed the small birds that poured forth their songs from every bush and tree, in marvellous numbers and varieties. It is a veritable Paradise for the Warblers and Flycatchers. One abundant bird seemed to have prepared nest and eggs for the special delight of the collector, in the Spruce bushes about four or five feet up, an easy find, with nest like a typical Chippie's; but unmistakable, and handsomely marked Warbler eggs we found, quite a number of them, all ready for the collector's hand, without audible protest or visible owner. They were called Magnolia Warblers. The Warbler species abounded everywhere. Nashville Warblers were very abundant in open fields contiguous to woodland, their songs echoed from every direction, three of their nests each with 5 eggs fell under my observation; they were very closely concealed in the slight grass of the pasture, usually in some mossy bank; my friend found one in the same site, used by the bird last year. Black-throated Blue Warblers were common, and the song of the male and chipping of the female greeted us in every swampy place visited; but we found no nests—perhaps we did not know how or where to look. The Blackburnian Warbler was another very abundant bird, chanting its silvery notes among the branches of every grove, wherever we went. Realizing the difficulty of locating a little nest among the dense tops of the Spruce groves, little or no effort was made to that end; but in due proportion to the birds, such nests must be very numerous in that section. The Myrtle Warbler was not rare, and its harmonious thrill often attracted my attention. One or two nests were observed; these were also in small Spruce trees, about six or eight feet from the ground, more substantially built than the Magnolia's, of fine Hemlock twigs and warmly lined with feathers. One other little Warbler, which seemed to be the most abundant bird in that section, was the Canada Flycatching Warbler, everywhere present, and manifesting itself by its song, constantly repeated from every grove and thicket, a weak imitation of the notes of the Hooded Warbler, so well known at home.

It seemed as if the nest of a bird so abundant, must fall under the observation of so much visitation, if on or near the ground as I have been informed, and to that end most diligent was the search; especially did I examine among the heaps of roots, mud and sphagnum thrown up by the numerous wind prostrated trees which were so plenty in some swampy places as to make them almost impenetrable; at last I found a nest, and exulted at the triumph. It was built into the side of one of those piles of earth among the roots, mud and sphagnum, about four or five feet up, and composed of sphagnum dry and brown, and neatly lined with fine grass. Later we

found two of three more similar nests in similar places. I never dreamed that they could be other than Canada Warblers; but the owners proved to be Yellow-bellied Flycatchers, a species not previously observed at all, so retiring were their habits, and the Canada's nesting place remained undiscovered. One very numerous bird, in every deciduous swamp, was the newly-named Alder Flycatcher; their notes quaint, varied, and entirely new to me, saluted me everywhere, and whenever I heard an unknown song, called it an Alder Flycatcher without question, a rule that proved unequal to the emergencies, for later developments proved the Yellow-bellied Flycatcher the source of many trills and quirks mistakenly ascribed to his relative of the Alders. The first day out I heard a note loud and clear but *new* to me; it had a Flycatcher accent, and my companion was sure it was a Gt. Crested F., but it seemed totally distinct from any note I had ever observed from that species, and called for an investigation; the bird took flight from a lofty tree-top, as we drew near, and proved to be the Olive-sided Flycatcher. The next day we saw and heard a number of them in similar situations, and soon discovered that the bird was a common species in that section.

Among the Vireos, the Warbling was very common in the shade trees of the village street, and I noticed a nest swinging in the breeze on the topmost boughs of an Elm at least 60 feet from the ground; the male bird was continually caroling from the branches below, where his song could be heard and appreciated by listeners beneath. Red-eyed Vireos were also common, and one day in the woods while discussing the possibilities of the Philadelphia V. a peculiar vireonic note struck my ear and called a halt; investigation revealed a Solitary Vireo, sitting on her beautiful nest, and whistling as if to attract attention; there was nothing in the nest, but she clung to it till touched by the finger. The next day we found three more nests of the species, all in exactly the same situations, in small Spruces, close to the main stem, in a crotch formed by a whorl of branching twigs. The second nest contained young with feathers, indicating that the nest must have been built and eggs laid before the middle of May, a suggestion regarding a Vireo quite surprising to me. The third nest found contained *five* eggs, the largest set of any Vireo I ever saw or heard of. This bird absolutely refused to leave the nest; even when we tried to *push* her off, she clung tenaciously to it, and would not leave. My friend took her at last by the beak, and passed her to me in that manner to examine, but she remained as quiet and rigid as if made of wood without a flutter even till she was tossed in the air.

How I was startled as a bird sprang from under a small Spruce shrub by my side with great fuss and flutter, and dashed into a thicket a rod away. It proved to be an old acquaintance, the Hermit Thrush, and the nest built into the ground beneath with its four pale blue eggs was new and interesting to me. The songs of the Hermit and Olive-backed Thrushes were among the charming attractions of the dark Spruce thickets. Apparently very common birds everywhere, the notes of the Hermit are a sweet

imitation of our Wood Thrush, though weaker in volume and force, but the Olive-back was decidedly original in its song. One day I found myself facing one of these birds on its nest, the great staring eyes looked into mine, the very picture of wildness. Don't touch the eggs, said my friend, if you do the bird will either destroy them or carry them away. Superstition, thought I, and took one in my hand, a very handsome green egg, profusely blotched and spotted about the large end. A substantial bulky nest of twigs and grass and rootlets, lined with grass, situated in a small Spruce, about five feet up, all very interesting; but my friend's prognostication proved too true, and only an empty nest greeted my next call. There was one little Warbler there, quite common, that *baffled* me completely; its song was clear and vigorous, when several rods away, but ceased upon near approach, and the foliage was so dense I could not find him; he moved my curiosity and incited diligent search every day, but defied discovery. I thought it must be the Bay-breasted with whose songs I am unacquainted. The only Buteo and most common Hawk observed, was the Broad-winged of which eight sets of eggs were taken. Sparrow Hawks were also common and several nests were noticed, mostly in very decayed birch trunks, dangerous as well as difficult of access. One set of American Goshawks was also secured. I was startled one day at hearing, some little distance away, a wild cry or scream several times repeated, and presently saw a large black bird, almost like a Crow in flight, dashing away and afar from the grove whence the sound had emanated; it was pronounced a Pileated Woodpecker. Later I saw and heard others, and finally my friend found a nest. Of the other Woodpeckers observed, the Yellow-bellied seemed most common, nesting abundantly. Black-headed Snowbirds were common and several nests of young were observed. The little Red-breasted Nuthatch was also a common resident, excavating its own nesting place in the decayed Birch stumps so common in the swamps; these nests were usually from 15 to 20 feet up, in stubs soft with decay, and that seemed ready to fall with a push, and an Oologist might well pause before trusting his life to such a climb. Two interesting birds were quite abundant, Pine Finches and Red Cross-bills. I saw several flocks of the latter flying among the Spruce Woods, but the greater number observed were in the Elms of the village street, where both the Finches and Cross-bills in numbers, were feasting on the ripening seeds, and the Cross-bills occasionally hopping in the street with the English Sparrows. As this was in June, the question often confronted me, when and where did they nest. Seventy-nine species of birds came under my observation during the brief stay (of eight days), and the time and circumstances would seem to indicate, that most if not all of them were located for nesting purposes. Several like the Phoebe, the Grackle, the House Wren, the Winter Wren, the Brown Creeper and Scarlet Tanager were evidently very rare, only a single specimen of each being observed, but most of the species were very abundantly represented.

SOME SPRING NESTS.

BY EDGAR MAGNESS, Redlands, Cal.

After the Humming Bird, the daintiest builder is perhaps the Goldfinch. In Redlands I observed a nest with its full complement of five creamy white eggs on April 26th. It was placed in the top of a young orange tree near a house, some 10 feet from the ground. It was composed of half-dried weeds (which I saw the female gathering by the roadside for another nest), and lined with fine feathers.

The plain little mother was very gentle, and left her place only when I began to climb into the lower branches for closer scrutiny.

As usual, the male does not assist in the building, but accompanies his busy mate very punctiliously, with many pretty poses and sibilant whisperings of commendation.

Bullock's Oriole (*Asterus bullocki*) has the cleanest and most ingenious nest I have ever seen. Here it is made entirely of Palmetto shreds, woven into a willow-like basket. This is lined with cottonwood down, often brought from a great distance, as no substitute suits this sybaritic architect.

The one I observed particularly was sewed to the underside of a Palmetto leaf 20 feet up. Two holes are pierced in the leaf, into which threads are stretched, and these main supports are braced by other longer threads, hitched to other parts of the branch. The nest is thus protected from the fierce heat of this latitude, which sometimes reaches 110° in April, and the rain and sand storms as well. The purely ornamental part of the nest is a long plume of the same material, pendant from the bottom which sways gracefully in the slightest breeze. A beautiful cradle certainly—the young waking to a *berceuse* of the wind blowing resonantly through dipping Palmetto leaves.

On April 27th, I took a nest of the Cactus Wren (*Campylorhynchus brunnicapillus*) which from the green weed stems in its composition must have been lately vacated. It was the usual elaborate affair, made of twigs, lined with rabbit fur and feathers, and hung in a cane Cactus 4 feet up. It was found on the Santa Ana Desert or Wash, two miles from the city.

NESTING OF THE WARBLING VIREO.

BY J. P. PARKER, Columbus, Ohio.

The last week of May, 1898, I spent with E. B. Williamson and R. C. Osburn collecting near my old home, at Danville, Ohio. On the 23rd we discovered a Vireo's nest in an apple tree, and took for granted that it was the nest of the Red-eyed Vireo, which breeds abundantly in that vicinity. There was no bird upon the nest, and we did not disturb it. As we were passing through the same orchard on the 26th, our attention was attracted by the song of the Warbling Vireo in the vicinity of the nest we had previously located, and we began to suspect that the nest belonged to it. Williamson ascended the tree, and secured the eggs, which appeared too small to be those of the Red-eyed Vireo, and he advised us to secure the bird, which he had just scared from off the nest.

We began at once with our "flippers," and in a short time Osburn wounded the bird, but darkness coming on, she escaped. I returned with a gun next morning, and fortunately secured the wounded bird, which proved to be a female Warbling Vireo. This was a pleasant discovery to us as neither of us was aware that this Vireo nested in that part of the state. The set contained three slightly incubated eggs.

On the 27th a second nest was secured from the top of a little sycamore overleaning a small creek. It contained two fresh eggs. On the 28th a complete set of four was taken from a nest in a sycamore by the same stream. Four nests were secured on the 31st. The first, taken from a willow, contained two badly incubated eggs. The second, also taken from a willow, was empty; whether it had been plundered or

had not yet been occupied, I cannot say. The bird, however, was still singing near the nest. The third, taken from an apple tree, contained four eggs so badly incubated as to defy all attempts at blowing them. The fourth nest contained three slightly incubated eggs, was taken from a sycamore standing by the road-side, the nest being placed about fifteen feet from the ground, and directly over the road. I went early in the morning to secure this nest, which had been located the evening before, and found one bird sitting upon the nest, and the other (the male I presume) singing in the top of the tree. While I was pondering how I might best secure the nest, the bird upon it left it, and perching near uttered a call note or two. The one in the top of the tree came down, settled itself in the nest, and the other flew away, and began feeding. From this it would appear that the birds share the labor of incubation.

Of the seven nests, five were built upon trees on or near the bank of the creek, and two were in orchards a half mile from the stream, the heights of the nests varying from ten to thirty feet. In structure and appearance the nest of the Warbling Vireo is like that of the Red-eyed in all save that it is a trifle smaller. The lining of one nest—the first taken—was composed almost entirely of horsehair. This is the only Vireo nest I have ever seen thus lined; but I think this lining can be accounted for by the fact that the nest was placed in an apple tree quite close to a barn-yard where such material could be readily obtained.

NOTE ON WILSON'S WARBLER.

By C. H. MORRELL, Pittsfield, Me.

Wilson's Warbler (*Wilsonia pusilla*) may be safely classed as one of the rarest Warblers which breed regularly in this State. It is nowhere common, even as a migrant, arriving during the second week in May with the main army of migrating Warblers. I always see it singly or in pairs, never in flocks, at this time. They are birds of the bush, never going into large woods as do the Black-throated Green and Blackburnian Warblers, but spend the summer in knolly, bush-grown pastures bordering young growths. The males are in full song when they arrive, and not much time is spent before nest-building commences. The nest is placed under a tuft of grass, or at the base of a shrub, and so well concealed that it is seldom found, unless by accident. If two nests are sufficient data to warrant conclusions, it would seem that they differ principally from those of other ground-building Warblers in the simplicity of material used and in their small size.

A nest found June 12th, 1892, was placed at the base of a small shrub, and was mainly constructed of short pieces of grass, fairly well woven together, with a very few hairs mingled with the grass lining, and some moss and leaves exteriorly. This nest contained four nearly fresh eggs, and measured as follows: Outside top diameter 3.00 x 3.50 inches; inside top diameter 1.75; inside depth 1.25.

A second nest found June 4th, 1897, was in the

side of a depression in the ground, well concealed by overhanging grass and shrubs. It was constructed like the first one, with the exception of the hair, in the place of which were a few black, hair-like roots. This nest also contained four eggs, in which incubation was advanced. In both instances the parent bird was flushed from the nest and remained near, flitting from bush to bush, but not displaying great solicitude, either by voice or action. The eggs have the plain white ground with spots of brown and red of various shades, common to most Warbler eggs. The markings have a tendency to wreath the larger end in some specimens, and spots rather than blotches seem the rule; but there is nothing that would distinguish them with certainty from the eggs of other ground-building Warblers. In addition to these nests I have frequently seen these Warblers leading a callow brood about in June, and have come to regard them as regular, though rare, summer residents in this vicinity. Though Dr. Cones, in his description of this species in the "Key," says: "♀ lacking the black cap," this can hardly be a constant feature, as I have carefully noted the appearance of the parents when I have found them with nests or young and always find the cap present with both. Wilson's Warblers do not tarry long after the broods are reared and are able to care for themselves, and few are found here after the first of September.

WINTER NOTES ON THE MYRTLE WARBLER (*DENDROICA CORONATA*) IN MASSACHUSETTS.

By FOSTER H. BRACKETT, Boston, Mass.

The Myrtle Warbler has been known for some twenty years or more, to occur sparingly, in some localities in Mass., during the winter, but it is not until recent years that it has been known to occur in any large numbers.

One naturally associates the Warblers with warm weather, when the trees are in leaf, and the insects numerous, and it seems very much out of place to find one of this family surrounded by snowdrifts, and enduring the severe weather of a bleak New England winter.

My first winter experience with this species was in Marshfield, a town about 30 miles southeast of Boston, on the shore of Cape Cod Bay, in January, 1894, and a few extracts from my journal may be of interest.

The last few days of January and the first week of February, 1894, were unusually cold and stormy, with severe gales and drifting snowstorms, and the very worst weather one would think of choosing for looking for Warblers in a locality where the principal features were sandhills, long stretches of beach, and salt marshes, with a few scattered clumps of trees and bushes.

January 27. Ther. 20° (8 a. m.) Hard northeast gale all day, with driving snow. Impossible to see any great distance.

January 28. Ther. 19°. Bright, sunny day. Snow badly drifted. This morning two Myrtle

Warblers flew into the trees back of the farmhouse, and stayed quite a while.

January 29. Cloudy, raw and chilly. Saw a Myrtle Warbler in the bushes on the hillside near the marsh. This bird I chased for quite a long distance, but it kept aggravatingly just out of gun shot, and finally disappeared in the woods leaving me floundering hopelessly in a snowdrift. About 5 p. m. it commenced to blow and rain, and increased to a gale which continued all night.

February 2. Ther. 20°. A bright, crisp day with strong northwest wind.

February 3. Ther. 38°. Cloudy in the morning, but clearing at noon.

Today I made a systematic search to discover, if possible, the whereabouts of the Warblers I have seen. A few scattered clumps of Alders and White Birches, at the southerly base of a hill on the edge of a wet meadow drained by two or three small brooks and rushes, seemed as likely a place as any, and here I found a flock of about thirty birds scattered among the trees and bushes, and feeding along the ditches.

They were very wild and difficult to approach, acting more like Sparrows than Warblers, flying from the bushes and trees into the open spaces, lighting on the bushes or rocks, and running along on the snow or ice, and hiding

among the clumps of grass, and in the rushes. The few that remained in the Birches and Alders kept very low, and frequently flew into the snow, and hopped about among the weeds and underbrush.

A bunch of ten or twelve which I separated from the others lighted on the shingled roof of a barn on the edge of the meadow, and remained for some time until frightened by my approach.

The only note which I heard the birds utter was a clear *chip*. I shot six birds, all of them very fat, and with their stomach filled with bayberries and small round black shiny seeds about the size of dustshot.

February 4. Bright and sunny in the morning. Snow and hard northwest gale commenced at 3 p. m.

February 5. Ther. 20°. Snow ceased early this morning; but wind strong and cold all day.

Snow badly drifted, and roads completely blocked. Heard one Warbler this afternoon.

February 6. Ther. Zero.

February 8. Ther. 40°. Warm, bright and sunny. Snow melting.

February 9. Took a hurried walk before packing trunk. Saw forty or fifty Warblers in one flock on the marsh near road. Shot one.

From these notes it is evident that the Myrtle Warbler is a winter resident, in large numbers near the coast during severe weather, and is able to endure extreme cold, and driving snow storms, and to grow fat, and apparently enjoy life on a diet of seeds and hard berries when other species of the family are obliged to make long migrations upon the approach of cold weather.

NOTES FOR OBSERVATION OF HABITS OF BIRDS.

BY ERNEST SETON THOMPSON.

144 FIFTH AVENUE N. Y., July 8, 1899.

MY DEAR DR. GILL:

I am following with great interest as you know the proposed exhaustive work on American Birds. You probably never saw an article that I published in *Forest and Stream*, April 19, 1898. It is so exactly in line with the present proposed investigation that I think it possible you may wish to reprint a part of it. I therefore enclose an edited copy. Use as much of it as you think proper. I have marked one or two paragraphs that seem to me unnecessary. I have also added one or two questions that bear on leading departments. Of course the schedule may be used for any species and may be of great use applied to a different bird, as a duck or hawk.

I have accumulated a great mass of Song Sparrow facts, but have never yet found the time to set them in order. With best wishes.

Yours cordially,

ERNEST SETON THOMPSON.

[Mr. Thompson has subsequently modified and greatly extended his communication, and it thus appears here as a new contribution, for which we are greatly indebted to him.—EDITOR.]

With any one who for the first time sees a new or unknown object, the three questions that naturally arise are:

What is it?

Where was it got?

And what is it for?

That is, we are asked its name, native place and nature; and it is the whole province of each branch of zoological science to answer these questions with regard to its individual subjects.

Or to illustrate to the point, ornithology treats of birds and is supposed to supply the student, first, with the name of each bird; second, with information about its country or habitat; third, with information of its nature, which includes two very wide fields, the physical and the metaphysical, or anatomy and life history.

The first of these questions, the *which?* can be answered only by authorities profoundly versed in the subject, and the Check List of the Ameri-

can Ornithologists' Union contains the united opinions of the competent authorities of America.

The second question, the *where?*, comprising the whole subject of geographical distribution and migration, is partly answered already with regard to most of our birds. As it can be properly treated only by persons who have large collections of material at hand, and have given a great deal of time and study to the subject, here also it is better for the lay bird-man to refrain from "rushing in."

But the last question, the *what?*, is the greatest of all. It naturally divides itself into two branches, anatomy and life history. With regard to the first, much the same remarks apply as in the preceding paragraph, but the second, the life history, is the most important, and affords the proper field for those who simply love rural nature in the popular sense, and desire only to know the wild birds in their wildness.

"The real history of a bird is its life history. The deepest interest attaches to everything that reveals the little mind, however feebly it may be developed, which lies behind the feathers." So says the celebrated English ornithologist Seebohm, in his *History of British Birds*, and I am very sure that there is no lack of bird-lovers to re-echo the sentiment. The first two questions are of very great importance, and of such a nature that they insist on first notice, but having settled them as we now have, sufficiently for the purposes of the ordinary observer in Eastern America, we are brought face to face with what is, after all, of chief interest, the great question of the "little mind".

The ignorance that exists with regard to the life history of our birds is only beginning to be appreciated. We have, in fact, as a result of great labors during the last few years, only just succeeded in obtaining enough light to make the darkness visible. To show how little we know about the best known species, I would take for example the bird of all others that we are supposed to be perfectly familiar with, the common

Barn-fowl. How many of us can prove or disprove the simplest statements that can be made concerning it? How many of us can decide on the theory that a hen beginning to lay, lays on the first day early in the morning, next day an hour later, and so on until afternoon is reached, then a day is missed, and on the next day the bird begins again in the early morning? How many of us can contradict the statement that the hen is capable of real and faithful attachment to one particular male, even though several be in the yard? Which of us can say when and why the hen turns her eggs, or whether she knowingly turns them at all? It would be easy to go on exposing our ignorance, but sufficient has been said for my purpose, and I would follow with the remark, if we know so little of our familiar domestic fowls, how insignificant must be our knowledge of the wild birds. I am so satisfied that a harvest of knowledge and pleasure awaits those who will venture into this almost virgin field, that I have determined to spend one entire season at least in investigating the life history of a single species, and to the end that I may approach the subject systematically, I have tabulated the lines of investigation under twenty-seven heads. These are naturally limited by the knowledge and theories of the writer, but I believe that in the working them out one will most assuredly stumble on clues which, properly followed, will lead to light most unexpected, and to new ideas that have not even been guessed at by the preliminary schedule, for such has ever been the experience of those who have blindly but earnestly groped after the truth.

For numerous reasons, more or less evident, I have selected the Song Sparrow (*Melospiza melodia*) as the species for study, and propose collecting all possible evidence on the following items:

1. *Spring Migration*.—Give earliest appearance, etc.; state whether in flocks or singly, the species by itself or associated with congeners such as other sparrows, or wholly different species, such as swimming or wading birds, males in advance or both sexes together, by day or by night; crossing the lake or skirting its shores; flying high or low; recording in full the weather at the time of observation, also date, locality and moon, etc. Does it hide or return southward during the late spring storms? With what other species does it associate in migration? Do individuals that come early differ from those that come late? If so, are both found breeding here?

2. *Habitat*.—Is it found in dry uplands, dense forests or marshes, or does it manifest a preference for the vicinity of water, or especially of running water? Can any reason be assigned for its choice of locality?

3a. *Voice of the Male*.—Song and variations of the same; height from ground when singing; time of day; alarm notes, song periods, song flight, song by night; influence of the weather.

3b. *Voice of the Female*.—Song, if any, and full particulars as above.

4. *Voice of the Young*.—Has the young in first plumage a song characteristic of that period, as have some other species, and does this song resemble that of others of the genus in corresponding plumage?

5. *Care of Young*.—What devices do the parents use to protect the young.

6. *Habits*. What are its peculiar tricks of attitude, motion and expression? Does it hop or run? Is its flight ever undulatory, like that of many of its relatives? Is the tail-pumping a recognition mark? Is it nocturnal or aquatic at all? Does it ever wade for food, swim or dive to escape its enemies? Does it indulge in any sort of play, especially in a social way? Does it enter holes or burrows?

7. *Co-operation*.—Do two individuals, mates or otherwise, ever unite to do something beyond the strength of one, as catch prey, break down stalks, move nesting material, resist an intruder.

8. *Mimicry*.—Do they mimic, as songs of other birds, other sounds. Do they ever imitate birds of prey to drive away intruders.

9. *Signals*.—Can they distinguish the danger signals of other birds? What signals do they use besides vocal sounds? Do they tap with the beaks, wings or feet, or slap the water as a signal? Have they special night signals? How do they communicate with each other generally?

10. *Success in Life*.—Can it hold out against the English Sparrow? If so, what is its peculiar strength? Is the species increasing or not with civilization? How does it adapt itself to changing conditions such as deforesting? increasing human population?

11. *Summer Roosts*.—Does it form summer roosts? If so, does it use these in common with other species?

12. *Constancy*.—Does the same pair return each year to the same locality? This can be settled only by marking them in some way.

13. *Condition of each Specimen*.—Give full notes *re* genitalia, watching for cases of sterility, hermaphroditism or disease, counting if possible the number of ova, especially of those enlarged; giving also general condition of the specimen; stating whether fat or lean, diseased or healthy, parasitized or not, internally or externally, and to what extent.

14. *Food*.—Give in full—contents of mouth, gullet and gizzard, and preserve the same in labeled phials. Does it feed on the wing? in the water, under water, on tree tops, by night? Does it regurgitate pellets? Does it distinguish poisonous plants and insects? Does it teach its young to do so? Does it feed the young by regurgitation? Does its food change with time of life? Does it eat food that would poison another species? Do certain foods influence the bird's color? Does it store up food? Does it treat special foods in special ways, thus, put very hard seeds to soak, or remove the stings of wasps, or the wings of moths. Does it take food with its claws?

15. *Plumage*.—Particularize each specimen in form, color and measurement, noting differences of sex, season, age, moult and locality. Thus, do heavily marked specimens characterize a certain locality and so on. Do young or old moult first? Do sick or healthy moult first?

16. *Mating*.—Note fully any courtship observed, with maneuvers of both birds, or competi-

tions or rivals; is it ever polygamous or polyandrous? Do the same birds remain paired throughout the season, or for more than one season?

17. *Nesting*.—Give full particulars of construction, materials, proximity to the ground and to the water of each nest, preserving, photographing or sketching the same, and observing whether covered over or approached by a covered way; giving details of laying, time between each oviposition, variation of the eggs in size and color, stating whether those first laid are large or more heavily marked than those laid later; are the eggs turned daily, and if so by which bird. Does it line the nest with its own feathers? Does it show preference for any kind of lining or building material? Does it ever evidently go a long way to get certain materials while others are close at hand? Is same nest ever used twice? How does it clean the nest while in use? Is the first clutch of eggs more numerous than others of that season? Are young birds more prolific than older ones?

18. *Broods*.—Number per season; average of each? Are later broods less? How long is each cared for by the parents? Is the female first to desert her charge?

19. *Cowbird Parasitism*.—Is the Song Sparrow ever imposed on by the Cowbird? Particularize each case observed, or does any other species ever lay in Song Sparrow's nest? Is the Song Sparrow ever guilty of parasitism of this kind?

20. *Crime*.—Have the old ones been known to kill the young by accident or for reason? Or

to kill congeners, or to make serious blunders as to suicide, and if so, how?

21. *Young*.—Give in full their habits, food, plumage, comparing them with their parents and with their near congeners. Are they ever fed from the crop of the parents? Is there any evidence of a late summer *northward* migration among them?

22. *Relatives*.—What are their nearest congeners? Compare them in range, local habitat, changes of plumage, etc.

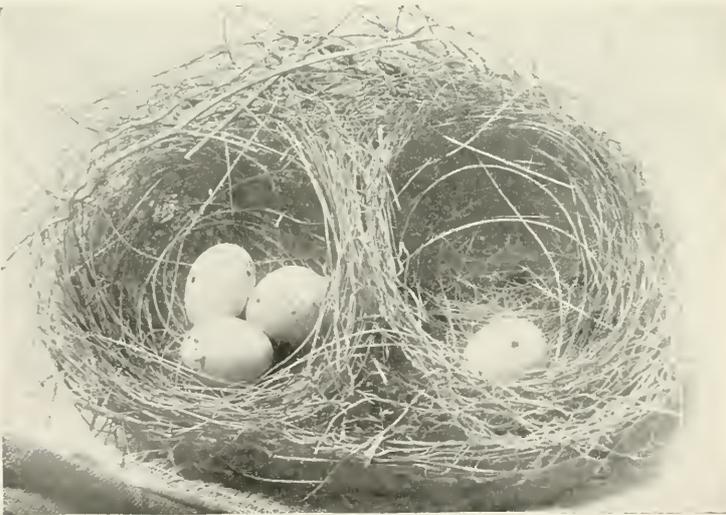
23. *Competitors*.—With what species do they most actively come into competition in the struggle for life?

24. *Natural Enemies*.—Enumerate predatory birds, mammals, reptiles, insects, etc. Also meteorological phenomena, and means employed to combat, elude or withstand in each case.

25. *Disease*.—What are the diseases the species is subject to. What disease predominates. Since all the individuals are killed in some way, it being improbable that any die of old age, what cause of death is the chief one, weather, disease, or birds of prey. What means do they take to keep themselves clean and to get rid of insect parasites.

26. What age does the species attain. What is the proof of this.

27. *Fall Migration*.—Particularize as in spring *migration*, giving latest appearance. Does it arrive in the spring singly and go in the fall in flocks? Is it ever a winter resident here? In the fall when leaving us, does it obviously await the full moon as do some species, or does it await the arrival of other species whose train it follows.



DOUBLE NEST OF SPARROW.

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Editorials.

CRITICISM AND EGG-COLLECTING.

In the May number of the OSPREY two letters transcending the bounds of legitimate criticism or reply were admitted by the editor then in charge. These letters were evoked by the Rev. W. F. Hemminger's article entitled "The Scourge of Egg-collecting" in a former number of the OSPREY. Possibly Mr. Hemminger may have been too specific in his charges against egg-collectors, but certainly not enough to call for the personal abuse which appeared later.

We have admitted a reply from Mr. Hemminger in the present number because we think he had reason to complain of the assaults upon his character, and because the former editor had promised him the opportunity to answer. We have also admitted a letter from Dr. F. H. Knowlton on the same subject.

The subject primarily under discussion—egg-collecting—is one respecting which differences of opinion are quite natural. When one of the parties loses his temper, however, and simply indulges in vituperation, an unprejudiced reader may entertain the opinion that he recognizes that he has the worst of the argument, and is simply beclouding the case to direct attention from the true issue involved. The case is thus unduly weakened.

Egg-collecting in moderation is not only justifiable, but may be laudable in one who becomes interested in the study of birds. Nor is it injurious to the birds themselves if only one or two eggs are taken from the nest of a multiparous

species. Indeed, it may be imagined even that the pleasure of what Gilbert White was wont to call the *storge*—that is, parental instinct—of the parents may thus be prolonged and the pleasure of their lives thereby increased. When however, the mania for collecting or the cupidity which may be at the bottom of it is manifested by robbing the birds right and left, it is carried to an unjustifiable extreme. It is to be remarked, also, that none of the inordinate egg-collectors have justified their excessive indulgence by their work. Who of them has made known any facts derived from the over-extensive collections?

There are, nevertheless, many facts to be made known, but some of the facts must be ascertained by sacrificing the shells!

DESIRABILITY OF EXTENSION OF STUDY OF EGGS.

We cannot but be surprised at the want of attention to the contents of the egg in all the works on the eggs of birds published, not only in this country but in Europe. The real case in oology would be paralleled by a work on ornithology in which exclusive attention was paid to the skin or exterior, and the anatomy untouched. Yet a wide and fruitful field for investigation is offered by the interior of the egg. Chémico-physical researches would probably lead to a classification which would aid the systematist in the arrangement of the class at large, and either confirm other data or indicate the necessity or at least advisability of reconsidering a mooted question of taxonomy. Nearly half a century ago, before any zoologist had appreciated the radical distinction of the classes of reptiles and amphibians—when in fact most regarded them as constituents of a single homogeneous class—two French savants recognized the differences between the eggs of the two and that those differences tended in opposite directions—one to the birds and the other to the fishes. Now, it is generally conceded by scientific zoologists that the birds are almost inseparable from the reptiles while the amphibians are very closely related to the crossopterygian and dipnoan fishes and to the selachians. This recognition is the result primarily of the consideration of the morphology of the respective animals. But long before this recognition was attained (in 1854) Valenciennes and Frémy reached similar conclusions from a study of the chemical and physical composition of eggs.

They announced, as the second of the "conclusions" to which their studies had led, the

following: "That among the vertebrated animals, the eggs of birds, of reptiles, and of fish, present in their composition differences which the simplest analysis cannot mistake, and besides that the eggs of Sauria and Ophidia bear great analogy to those of birds, while the eggs of Batrachia resemble those of the cartilaginous fishes"*. This conclusion is the more noteworthy as it did not lead the observers to recognize the heterogeneity of their class of reptiles, the true reptiles and the amphibians being still combined in the one class.

Within the class of birds, the French savants found noteworthy differences. For example, say they, "In examining the white taken from eggs of different kinds of birds, we have often noticed that this body has varying properties. In some kinds, it is almost fluid, in others it possesses a gelatinous consistency. The white of the egg of a hen is, after boiling, opaque and of a pure color, white and solid. That of the lapwing becomes after cooking, transparent, opaline, greenish, and so hard that it may be cut into little stones, used in certain parts of Germany for common jewelry"†.

These extracts may furnish hints as to points to be observed. The study of chemical details would demand special training and experience, but some physical characteristics might be investigated by ordinary observers using proper care and precautions. Such are the absolute and relative time required by the white and yellow to become hard in boiling, the degree of hardness acquired, and the behavior of the white and yellow to reagents.

There is much room for investigations of this kind, and scarcely any attention has been paid to the subject by oologists. Chemists have done considerable in the way of analysis, but the want of comparative method renders their contributions of little value for the zoologist. If we could have such an union of the zoologist and chemist as was accomplished in the case of the investigations by Valenciennes and Frémy, with modern methods, we might undoubtedly have a rich harvest.

The edibility and taste of eggs of different kinds would also be interesting subjects for investigation, some being repulsive or even injurious as food, although most are regarded with not very unequal favor. It is noteworthy that the eggs of some fish-eating birds are often blamed for a fishy "taste". The "taste" so called, however, is subjective rather than objective. In other words, the taster, knowing the source of the eggs and the habits of the bird, attributes the peculiarity of flavor to the food, and therefore calls it "fishy" whereas it is really differentiated from the normal flavor—that of the hen's egg—in an undefinable way.

Unfortunately, we have as yet no gustometer (or measurer of taste) and consequently the results of inquiry would be expressible to a considerable degree in terms of the imagination rather than exact science. Some interesting results, nevertheless, might be obtained by judicious observations.

Letters.

FLIGHT OF AMERICAN GOLDFINCH.

EDITOR OF THE OSPREY:

Noticing a question some time ago by Mr. Walter Deane, of Cambridge, Mass., as to whether the statement on page 213 of "Citizen Bird," by Mrs. Mabel Osgood Wright and Dr. Coues, that the American Goldfinch utters its flight-call "on every down-grade curve," were not a mistake, I took particular pains to settle the matter for my own satisfaction during last summer. On page 287 of his excellent handbook, Mr. Chapman has the bird very graphically represented as uttering his notes on the downward curve; nevertheless my observations showed that this call is always uttered on the up-grade. I find reference to support this in Mr. P. M. Silloway's "Sketches of some common birds," where Goldfinches are described as "bounding upward with waving wings, and curving downward with folded pinions, *uttering their short measures as they rise* with the movements of the wings." In fact, I think it will be found to be quite a general rule with birds that have this intermittent or

up-and-down flight, that their notes, when they have any in flight, are emitted at the time the wings are in use. I was rather interested to know what some of the older ornithologists said about this habit of the Goldfinch, or whether they said anything at all, and to show what minute and accurate observers some of the pioneers of American ornithology were, I will give what I found in two instances. To quote from Wilson: "Their flight is not direct, but in alternate risings and singings, twittering as they fly, at each successive impulse of the wings;" and Audubon says, "The flight of the American Goldfinch is exactly similar to that of the European bird of the same name, being performed in deep curved lines, alternately rising and falling, after each propelling motion of the wings. It scarcely ever describes one of these curves without uttering two or three notes whilst ascending, such as its European relative uses on similar occasions."

LEON J. COLE,
Ann Arbor, Mich., Apr. 7, 1899.

*Am. Journ. Sc. and Arts (2), Vol. xx, p. 71, 1855.

†Am. Journ. Sc. and Arts (2), Vol. xix, p. 40.

AGAINST EXCESSIVE EGG-COLLECTING.

WASHINGTON, D. C., June 17, 1899.

EDITOR OF THE OSPREY:

I find in the May number of the OSPREY a number of things that interest me greatly. I was especially pleased with the manner in which several of your correspondents handle the Rev. W. F. Hemminger, whose article on the "Scourge of Egg-Collecting" has excited so much ire. I was pleased at this Billingsgate, because it simply emphasizes the weakness of their position, and the strength of his! Abuse has never been regarded as argument, and if this is to be taken as a sample, it will be long before it comes to be so recognized. "When you have no case abuse the opposing counsel," is said to be a rule of practice among certain lawyers. If it were not a libel on the legal profession. I would suggest that certain of your correspondence were better lawyers than ornithologists!

Now I am not moved by any maudlin sentimentality in the matter of collecting birds or their eggs, when there is even a reasonable scientific excuse for so doing. I would, without the slightest compunction, shoot a bird in the act of feeding its young, and then take the nest and young, if they were *needed for real scientific study*. I would not hesitate for a moment in taking the nest and eggs of a bird, if, by so doing the *science of ornithology could be advanced*. But I would not collect forty sets of Ruby-throated Humming Bird's eggs! I would not select twenty-five sets of Whippoorwill's eggs! I would not take one hundred and fifty eggs of the Red-tailed Hawk! I would not collect nine hundred and seventeen eggs of the Kentucky Warbler! I could not conveniently handle "one hundred and twenty-five sets of Brown Pelican's eggs!"

I am informed by reliable authority that there is a private collection in this country comprising nearly fifty thousand birds' eggs. If this be true, this collection is nearly as large as that of the U. S. National Museum, and even larger than that of the great British Museum. Yet the owner of this collection has *never contributed a line to the science of ornithology*, or, as far as I know, *donated or loaned an egg for real scientific purposes!* And this is scientific ornithology! This is why it is necessary to collect large series of eggs! With these "absolutely necessary" series on hand our enterprising ornithologist will be able to describe to a nicety the varying shades of pure white in his forty sets of Humming Bird's eggs. He can give the absolute number of spots on his 917 Kentucky Warbler's eggs, and present in fractions of a millimeter, the range in size observable in 29 sets of Goldfinch's eggs, etc., *ad nauseam*.

In order to bolster up his position Mr. Norris brings in Major Bendire because he "always collected large series of eggs". It is perfectly evident that Mr. Norris had not the honor of a personal acquaintance with Major Bendire or he would never have dared bring him into this malodorous discussion. Major Bendire did collect series of eggs, and he made good use of them too, which is more than Mr. Norris can seem to claim, but there is not a species in his collection represented by the series above re-

counted. Bendire was in sympathy with every honest, intelligent student of birds or their eggs, but there was no place in his economy for frauds and charlatans. He was careful not to do or say anything calculated to incite youthful or incompetent persons to begin indiscriminate, ill-judged egg-collecting, and more than once too he advised against giving precise information about the nesting sites of our birds. Would that the bluff old German were here to day to make use of some of the vigorous language at his ready command, in cases like this!

One word more and I am done. It is really pitiful to see such a display of ignorance as that relating to the abandonment of Latin names for our birds, as on page 140. It would have been kinder to the author had the editor seen fit to suppress this portion of his communication. And in this connection I may add, that in my judgment, the editor of the OSPREY himself does positive harm to the science of ornithology in giving color to the idea that we shall ever be able to do without scientific names. Because there are temporary differences of opinion as to what Latin name a bird shall bear is certainly no argument for the rejection of all such names. People too ignorant to understand the question themselves are misled by weight of authority.—F. H. KNOWLTON.

CRITICS ANSWERED.

WAVERLY, OHIO, JULY 28, 1899.

EDITOR OF THE OSPREY:

Enclosed you will find two articles, which I kindly beg you to publish. I would not have written them, had not Messrs. Norris and Crispin in the May number of your esteemed Magazine heaped *personal abuse* on me. But for this reason I think I ought to be granted a defense. It is my last protest, but I ask for protection. The May number did not reach me till in July. Dr. Coes in a "personal letter" allowed me a reply, but as he has retired from your staff, I must now confront a stranger. Please take the May number, and read my articles carefully in connection with those referred to, and I think there will be no objection to their publication. I ask this as a personal favor in defense of myself and profession.

Respectfully yours,

REV. W. F. HENNINGER.

MR. J. PARKER NORRIS, JR., ENLIGHTENED.

In the May Number of the OSPREY Mr. J. Parker Norris, Jr., undertook to criticize my article of the February Number. To this criticism or reply let me make a few remarks. Firstly regarding Major Bendire's omission. This was done purposely, because it would be absurd to place Bendire in the same class with Davie and Norris. Bendire is too high above their standard and would thank Mr. Norris little for trying to degrade him thusly.

Furthermore a reasonable amount of collecting, even of a series of sets, is necessary—a fact which I never disputed. What I fought against was the unreasonable amount of collecting, espe-

cially where there is hardly any variety at all, as for instance in the case of *Ptychoramphus aleuticus*, quoted in my February article. What business has this in a *private* (!) student's cabinet. This was pointed out by Mr. F. H. Knowlton already, likewise by me, and is done so again in "Hints to young Bird Students" (*Auk*, Vol. xiv, No. 3, page 303). This escaped your observation, Mr. Norris! Besides, why did you not abuse Mr. Knowlton too? Was he too much for you? Or did your courage fail you? Then Mr. Norris is mistaken, if he considers me an Audubonian. I have never belonged to an Audubon Society, nor will I ever. In regard to my "field experience", please ask the Michigan Ornithological Club, above all the migration committee. How many intelligent collectors of the Norris kind never take highly incubated eggs or leave alone the second or third set from the same parents? If I was to publish a book on Oology and Ornithology I would avail myself of a collection in some museum, but would not amass an unreasonable amount of eggs in my own cabinet, nor would I ask Mr. Norris for his help. As Davie and Norris have had much more field experience than any other living Ornithologist, why don't they publish a book that tells us something of the way, and manner, in which birds build their nests, instead of giving a dry enumeration of nest material, and egg measurement only, which alone do not suffice, and prove nothing. As far as belonging "to the great multitude of those who are crazy to get into print" is concerned, let me say that I have been in print too long to be crazy about that. But then Mr. Norris presumably reads nothing else but Oliver Davie's Nests and Eggs of N. A. birds; otherwise he would know better than to write silly remarks about other people, which apply rather to his own case.

Finally, let me say that I am exceedingly sorry that I have worked several years at an European museum in the Department of Oology, instead of studying Norris's great collection. Likewise am I sorry that I studied Oology under the indirect tutorship of the late Dr. E. Baldamus, instead of Oliver Davie, Norris and Co. That was my crime, dear reader! From that source my dense (!) ignorance is derived, which calls forth the intelligent (?) higher (!?) criticism (?) of Mr. Norris. This dense ignorance was also the reason why I abstained from ungentlemanly and unmanly personal slurs towards my adversaries. These slurs form the principal features of Mr. Norris's article, and are undoubtedly the best proof for his learning and knowledge and my ignorance. In this respect just as in the others, not the young collectors need enlightenment, but Mr. Norris.

"VOLCANIC ERUPTION". MUD VOLCANO!

Under the title of "Volcanic Eruption" an individual from N. J., wrote an article in the May Number of THE OSPREY against me.

The most prominent feature of this article is his own precious "I" as it appears at the head of three fourths of his sentences. Furthermore not all volcanoes send forth a consuming fire, but some only sputter forth mud. Such a mud volcano was the one which burst open in the above-mentioned article, as that was not the consuming fire of criticism, only the sputtering forth of dirty personal abuse of so low and base a type, that Mr. Norris's words are quite seraphic in comparison with it. Were it not for the readers of the OSPREY, I would not take notice of this venomous article. Had the writer of that article ever seen anything else but his native backwoods with its Leech's devil and similar superstitions, he would know that only a small number of pastors have the custom to get the unconverted souls to the altar; that by far the greater number of churches in this world have not this custom. So it happens to be not even the custom in our church, not even my task to do this. Besides I fear it would be useless in his case any how. As he was to give us more reasoning than I did, I gladly looked for it, but it failed to realize. Where in my article did I heap any personal abuse on Messrs. Davie, Crandall and Norris or on their profession? All I fought against was one feature of Mr. Davie's book, and the claim of being scientific men! Where got I my diploma? Where you didn't get it, Wm. B. Crispin—one in Europe, and one here! You see? What do you mean by Nature's diploma? Bombastic phrase!

In regard to the Flicker and hen, which you don't seem to be able to distinguish, read *Auk*, Vol. xvi, No. 3, page 304. Latin names were used. The only trouble is stability. Dr. E. Cones has a sensible reason, when he speaks of abandoning them; not so Crispin. Get down to other classes of zoology once, for instance the Infusoria, Rhizopoda, Radiolaria, Heliozoa and others. Where would we be without the rigid Latin names!

The modern languages are not up to the emergency. Similar reasons prevail in the Latin names for ornithology. But to abandon it because Crispin is of "English descent," though not of "English decency", is no reason at all. Perhaps he thinks I handle him a little roughly. As he shuns Latin so, here is the answer in that language: *Quanti quisque alias facit, tanti solet ipse fieri.*

W. F. HEXINGER.

Notes.

THE LIVING BIRDS OF THE ZOOLOGICAL GARDENS of London, at the end of 1898, were 1,363 in number. There were also 818 mammals and 475 reptiles and batrachians.

THE DRESSER COLLECTION OF BIRDS has been acquired by the Manchester Museum, we learn from Natural Science. This collection was made by Mr. Henry Dresser, author of the great Birds of Europe in 8 volumes, mainly with reference to that work. It however is rich in representatives of the families of Bee-eaters and Rollers which Mr. Dresser has monographed. It contains about 10,000 skins, among which are "several types and numerous rarities".

BIRDS FROM SIAM.—The National Museum has recently received a fine series of birds from the province of Trong, Lower Siam, Malay Peninsula, collected and presented by Dr. W. L. Abbott, already well-known from his travels and explorations in the far East. This series, received in four instalments, numbers over 1,500 specimens, and contains representatives of many rare species from this region. Among the interesting species may be mentioned *Machærhamphus alcinus*, a curious crepuscular hawk, which feeds on bats; *Lophotrichus kieneri*, another rare hawk; and *Thaumatibis gigantea*, a large ibis originally described from Cochin China, and hitherto known only from the type specimen in the Paris Museum. Many other species of interest, especially among the small birds, are also contained in the collection. C. R.

A COLLECTION OF THE BIRDS OF THE PHILIPPINES and other animals will be sent to the Great American Exhibition at Omaha to illustrate the Natural History of the Archipelago.

A RECORD OF SLAUGHTER on Prince Schwarzenberg's game preserves has been published. 39,000 grouse and 6,000 ducks and geese were killed besides 27,000 hares, 250 boars and 200 deer.

EXPERIMENTS ON YOUNG CHICKS have been made by Dr. Edward Thorndike and noticed in Nature. About sixty chicks of all ages were studied, and some remarkable instances of instinctive muscular co-ordination and emotional reaction were observed.

FORGERY OF EGGS is a crime not unknown in America. It is also committed in Europe. A dealer in objects of Natural History was recently exposed in Paris, who had made "Fly-catchers' eggs into those of the Silk-tail" and Waxwing and Larks' eggs into Nightingales'. Duck eggs were also transmuted into those of Falcons.

THE OSPREY NEST AT TOP OF POLE IN SWANSEA, MASS., figured in the June number of the OSPREY (p. 156) has been identified by Mr. H. S. Hathaway. The cut was made on the order of the former editor, but he was unable to give any further information than that furnished on the page referred to. Mr. Hathaway has

kindly sent the following information, "in regard to the photo of the Osprey's Nest. I have since learned that the nest was occupied by the bird, in 1896-97-98, but was not occupied this year. The way in which they came to build on the pole was this. Formerly they built a nest in the crotch of a tree near this house, and it was continually tumbling down, and the owner of the land, seeing their predicament, erected the pole for them to build on, and they very readily consented to place their nest on its platform.—In Portsmouth, R. I., this year a pair built their nest on the flat steeple of a church, and laid their eggs, but the church people thought they were a nuisance and pulled it down.

NEST OF BALD EAGLE.—The photograph reproduced in the accompanying illustration was sent by Mr. George G. Cantwell, and represents a nest examined by him. It should have ap-



peared in connection with his article on the "nesting of the Alaska Bald Eagle" in the OSPREY for January, (p. 66, 67.) but was not sent by the editor in time for insertion.

CURIOUS NEST MATERIALS USED BY OSPREYS.—I have been much interested in the variety of articles with which Ospreys decorate their nests. In one, I found a feather duster which had lost its handle; another had a piece of iron barrel

hoop. One had several pieces of cow dung, and a leather strap. Dangling above another nest on a limb was an old soft hat with a hole through its top. One couple had an old pair of trousers torn in shreds waving in the breeze on a limb near their nest, while another had a piece of white cloth built into the nest so that it fluttered in the wind as a sort of flag of truce. An old shoe and a stake pointed at one end decorated two other nests. A pair of birds have had their nests on the horizontal limb of a big elm up to last fall when the tree blew down in a gale breaking off about 8 feet above the ground. On this stump they built a new nest this spring, but I doubt if they were successful in raising any young as the nest was beside a road and very accessible. H. S. HATHAWAY, Providence, R. I.

AN AMBITIOUS HUMMER. The present tendency towards expansion appears not only to characterize Uncle Sam's citizens of the genus *Homo*, but seems to extend even to the tiniest of his feathered subjects.—*Trochilus colubris*.

On May 21, I found a nest of this species in the District of Columbia containing three eggs, all of normal proportions. Only two birds, one male and one female were seen in the vicinity.

BARTSCH.

DOUBLE NEST OF THE BALTIMORE ORIOLE.—This curious nest was collected in Dulaney's Valley, Baltimore County, Maryland, by Mr. F. C. Kirkwood sometime in the fall of either 1894 or 1895. It was built in a Walnut tree, and not

A PARROT STORY.—A maiden lady of a certain town of Cornwall owned a parrot, which somehow acquired the disagreeable habit of observing at frequent intervals: "I wish the old lady would die." This annoyed the bird's owner, who spoke to her curate about it. "I think we can rectify the matter," replied the good man. "I also have a parrot, and he is a righteous bird having been brought up in the way he should go. I will lend you my parrot, and will trust his influence will reform that depraved bird of yours." The curate's parrot was placed in the same room with the wicked one, and as soon as the two had become accustomed to each other, the bad bird remarked: "I wish the old lady would die." Whereupon the clergyman's bird rolled up his eyes, and in a solemn accent added: "We beseech thee to hear us, good Lord!" The story got out in the parish, and for several Sundays it was necessary to omit the Litany at the church service.—*From Household Words*.

THE NEW ZEALAND GODWIT is of the same species as an Alaska bird now generally called by American Ornithologists the Pacific Godwit or *Limosa lapponica baxeri*. The Maori of New Zealand have a proverb "who can tell There the Kuaka [Godwit] has its nest"? Mr. waylor White, of Wimbledon, N. Z., writes to Nature (May 11.) "that these birds should winter during a New Zealand summer, and then leaving should pass through both temperate and torrid zones, and still onward to the confines of the north frigid zone, is truly marvellous. Will any reader of Nature kindly contribute to our knowledge of the nesting place of the Godwit or the Knot, or remark on other points at issue?" An editorial note is added to the effect that the British Museum possesses a single egg of the Knot, said to be one out of a clutch of four obtained at Disco Island, Greenland.

Colonel Feilden has good grounds for believing that this bird nests in the New Siberian Islands".



found until the young had flown, and the tree had been blown down during a severe wind storm.

This nest has the appearance of having a porch attached to it, and is quite closely figured by a cut of a double nest of Orchard Oriole in *The Nidologist*, Vol. iv, p.30.

The photograph shows the nest a little more than $\frac{1}{3}$ size. —WM. H. FISHER, Baltimore, Md.

NEW DEVICE FOR AMATEUR PHOTOGRAPHERS.—Heretofore the photographer has found it difficult, if not impossible, to get a good picture of flying birds and other objects moving in uncertain directions. The difficulty has been done away with by the invention of Benjamin E. Sheffield of Livingston, Mont. His invention consists of a camera mounted on a gun-stock, and fitted with two triggers and two sights. One of the triggers sets the shutter, while the other makes the exposure. As the gun camera can be accurately aimed a narrow angle lens can be used, by means of which the object on the plate can be greatly enlarged as compared with

a picture taken with an ordinary lens. A man armed with a camera gun can go hunting just as the gunner does, except that instead of cartridges he uses sensitive films. He may enjoy all the thrill of the hunter without the horror of taking life, and will, in addition, have a permanent record of each expedition.—CHICAGO TRIBUNE.

[We reproduce this paragraph as a matter of news, but doubt the feasibility of the plan (save in exceptional cases) on account of optical and mechanical difficulties and the activity of the birds. We should be pleased to learn the views of expert photographers.—EDITOR.]

MOURNING WARBLER'S SONG.—Three specimens of the Mourning Warbler—conspicuous, loud-voiced songsters were noticed to tarry here about the borders of a bit of woodland from the 14th to the 28th of May, 1899.

One sang very differently from the other two, and all quite unlike the Maryland Yellow-throat. Consult Mr. Hathaway's notes in the March OSPREY.—E. D. DOWNER, Utica, N. Y., July 19, 1899.

SHORT-EARED OWL.—A portrait is here presented of a Short-eared Owl taken in Montana and tamed so as to permit unusual familiarities.



The photograph of the bird was sent by Prof. M. J. Elrod, of the University of Montana, Missoula.

A HYBRID BETWEEN A GUINEA-FOWL AND COMMON HEN was sent alive to Mr. P. L. Sclater

by Dr. Goeldi, of Para, (Brazil,) and noticed in the Proceedings of the Zoological Society of London for 1898, (p. 348). The male parent was a Guinea-fowl (*Numida*) and the female a domestic fowl. The hybrid presented the general appearance of a fowl with traces of the casque and wattles of the other parent, and, although a male, was destitute of spurs, as is the Guinea-fowl, and the voice, when it cried, was unmistakably like that of a Guinea-fowl". On the other hand, there were "no observable traces of the peculiar plumage of *Numida*". This hybrid was killed, and much of its skeleton (but not the head and limbs) given to Mr. F. E. Beddard for examination. The skeleton and the windpipe were found to be "perfectly intermediate in their characters between those of *Numida* on the one hand, and *Gallus* on the other". A detailed and illustrated comparison between the skeleton of the hybrid and parent species is published by Mr. Beddard in *The Ibis* for July, sustaining his views. Hybrids between the Guinea-fowl and common fowl had been noticed before, but Mr. Beddard is the first to have described other than superficial characteristics of the mongrel.

THE DEATH OF WILLIAM EDWIN BROOKS should have been noticed before as he died on the 18th of January. Although a resident since 1881 in Canada, chiefly at a place in Ontario called Mount Forest, he has been known as an ornithologist mainly by work on the birds of India, where he was employed for many years as an engineer by the East India Railway Co. Nothing notable appeared from his pen on American birds.

THE DEATH OF H. ALLEYNE NICHOLSON will be heard of with regret by many in America, who became acquainted with him when he resided in Canada. He was born at Penrith, Scotland, September 11, 1844, and died at Aberdeen January 19, 1899. He held the Professorship of Natural History in the University of Toronto from 1871 to 1874, and later he had a similar position in the University of Aberdeen. He is best known to most by his text books of zoology and paleontology, but his original investigations were mostly confined to paleontology and geology.

THE DEATH OF ADOLPH WALTER, a German Ornithologist, occurred at Kassel, February 4, at the age of 82 years.

THE DEATH OF SIR FREDERICK MCCOY occurred in May 1899, when he had reached the age of 76. He was born at Dublin in 1823. He early manifested considerable talent and originality in his geological and paleontological investigations in Ireland. In 1850 he was appointed Professor of Geology in Queen's College, Belfast, and in 1854 in the new University of Melbourne, Australia, and retained that position till his death. His first paper, published when a youth, in 1838, was on the arrangement of the Gulls, but later he practically abandoned ornithology.

Literature.

THE IBIS is such a valuable repertory of information, original and bibliographical, respecting birds of all parts of the world that a general index would be peculiarly valuable as a time-saver. The information that the British Ornithologists' Union will soon publish one will be received with much pleasure. The manuscript has been completed, and the volume, it was expected, "would be ready by the autumn". It will cover the first 36 volumes, from 1859 to 1894. "It was proposed to print only 300 copies of the Index" at the price of £1 1s. each.

THE BIRDS OF INDIANA.—The Birds of Indiana. A descriptive catalogue of the birds that have been observed within the state with an account of their habits. By Amos Butler. (Indiana Dept. of Geol. and Nat. Res., 22d Ann Rept. 1897 [1898], pp. 515-1187).

We are pleased to note that another of these useful summaries of Ornithological data, has been given to the public, and hope that it will serve as a stimulus to other states to rouse their slumbering bird-men to similar efforts. The completion of the present work is a result of the authors long experience, familiarity with the fields and untiring zeal in the tedious task of collecting, sifting, and boiling down of notes gathered from every available source.

The first 34 pages are devoted to an introduction covering such topics as "the Indiana Bird Laws," "Position and Boundary," Elevation, Physiographic regions, Drainage, Physiographic features, Peculiarities affecting bird distribution, Changes in bird-life, Destruction of birds, Zoological areas, and Bird migration, followed by a "Bibliography of Indiana Ornithology". The literature, it appears, extends from 1898 to the date of writing. Then comes the list proper, which includes 321 species and subspecies, 163 of which are indicated, by the prefix of an asterisk, to have been found breeding within the bounds of the state.

Convenient keys to orders, and families are found in the beginning of the list, and keys to the lesser groups are scattered throughout the work in their proper places. The 117 familiar illustrations will greatly aid the layman in the determination of his species, and add to the attractiveness of the book. The descriptions are terse but to the point, and the notes are interesting and valuable. A hypothetical list of 81 species includes such forms as may be looked for in the state or have been reported from neighboring states, and concludes the work—except as to the good index.—P. B.

THE BIRDS OF EASTERN NORTH AMERICA KNOWN TO OCCUR EAST OF THE NINETIETH MERIDIAN. Water Birds. Part I. Key to the families and species. By Charles B. Cory [etc].—Special edition printed for the Field Columbian Museum, Chicago, Ill., 1899. [Sm. 4to, ix, 142. pp].

As told in the title (which we give in full except the titles of Mr. Cory) this volume is mostly confined to the exposition of the differential characters of the Water Birds of the region in-

dedicated. It is however prefaced by a glossary and illustrations of the exterior regions and parts of a bird, and preceded by an introduction or systematic illustrated summary giving modifications of "the wings", "the tail", "the leg and foot", and "the bill". The key is not in a dichotomous form, but gives the characters by "groups" which may be either divisions of families, subfamilies or genera, but those groups, as a rule, are well contrasted with those of analogous categories. The illustrations are numerous, and many of them are excellent. An index completes the volume.

DESCRIPTIONS OF NEW BIRDS FROM NORTH-EASTERN MEXICO have been published by Mr. E. W. Nelson in the Proceedings of the Biological Society of Washington, (Vol. xiii, pp. 25,—31, May 29, 1899). Four new species, and eight subspecies are named. The new species belong to the genera *Troglodytes*, *Helodytes* and *Catharus*.

VICTIMS OF VANITY is the title of a temperate article in the August number of the English Illustrated Magazine, by C. W. Geduey, directed against the plume-gatherers and wearers. It is illustrated by a colored plate and 5 process illustrations in the text. The colored plate represents 6 species—3 Humming Birds, 2 Birds of Paradise, and the Red Tanager, "drawn approximately to the same scale." The tone may be judged from the following:

"Writers and speakers who argue against the cruelty and waste of rare bird-life which such fashion entails, are usually accused of doing injury to the cause they advocate by excessive zeal. I hope to escape such adverse criticism by appealing to facts and figures rather than to sentiment, and I have been careful rather to under than over-state the case".

A tribute is paid to the efforts in this country to influence those concerned.

"Amongst many other attempts made to educate public opinion against the killing of birds for their plumage, the American 'notion' of a 'bird-day' appears likely to bear good results in the future. If you want to convert woman, you must catch her young; and our cousins across the water have decided to start on the school children. The study of ornithology and the protection of birds has been added to the curriculum of nearly all the schools in the States. The natural savagery of the boy, however, is a factor to be taken into account in this connection. He may not have the slightest idea that he is guilty of wanton destruction; but it comes naturally to him to rob nests alike of their eggs and callow young, regardless of their rarity. But we must hope for some changes of fashion, some developments of public opinion, and the passing of legal enactments, if those who are to succeed us are to see living specimens of brilliant-plumaged birds. At the present rate of destruction, the end is not far off; and future generations will assuredly anathematise us for impoverishing the earth of its most beautiful birds".

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THE HOME OF A PAIR OF WOOD THRUSHES.

By R. W. JOHNSON, St. Thomas, Ont.

The city in which it is at present my fortune to reside, is built on the higher land overlooking a somewhat extensive valley. The latter must have been at one time the bed of a majestic river, but, whatever we might imagine of the original view, we find that the lapse of centuries has produced an even more beautiful picture from green fields, winding streams and wooded hill-sides. But, interesting as the landscape consequently is to the amateur photographer, it has for me far greater beauties, for I always think of it as one of the principal routes by which our returning birds, after crossing Lake Erie, distribute themselves over the coun-

try to their summer homes. Smaller ravines, too, tributaries of the original watercourse, intersect the suburbs of our city, and up these come all manner of migrants in search of food and seclusion while resting for a day or two on their long northward journey. "What a paradise for a bird-man!" said I on my arrival in this city of ravines, bridges and maple avenues, and since then the number of my ornithological discoveries has been more than I anticipated. One evening last spring I was delighted to hear some unknown singer in a small ravine a

few rods from my home, and after a brief search we found him fairly well up in a young maple, displaying his conspicuously spotted breast, and singing with all the pride of a cock-robin after a summer shower. How delighted we were to have found this species at last! From his resemblance to a young robin in his first plumage we knew he could be no other bird than the long looked-for wood thrush, which, though somewhat common a few degrees farther south, breeds rather sparingly in Ontario. When the writer was a boy his first interest in birds themselves was created by a desire for a typical collection of their eggs. Even now a bird with a nest and eggs is far more interesting than a dozen migrants, so the thrushes were carefully watched until building operations were begun. A site was soon chosen and by May 19, the nest was completed four feet up in a maple sapling on the hill-side. For a cornerstone there was used a large piece of foolscap on which some lad from a school nearby had tried to show his teacher what he knew of English grammar; and so substantial a foundation was it that the structure of leaves and weed-stems built thereon afforded Mrs. Thrush a solid though somewhat bulky looking home. Two days later the nest contained the first egg, and by the 25th of the month the set of four was completed. Scarcely different in color and shape from those of a robin, the eggs averaged somewhat smaller, in this case 1.05 by .76 inches; and so pretty were they that it is difficult to say whether the bird was more proud of her treasures than I was lost in admiration of them.

Now came a period in which the habits of the birds were easily observed, for the female was nearly always on her eggs, and his merry song easily indicated the whereabouts of her glad-hearted husband. On our approach we generally heard the sharp alarm-note of the male, and the female would leave the nest with a low churring sound and alight nearby to await the result of our visit. She was not nearly so shy as Wilson's, and after a few days she began to fear us so little that she would not leave her nest unless we came almost within reach. Then as soon as we had left the immediate vicinity the trustful creature would return, always flying close to the ground and gliding up gracefully onto her eggs.



A PAIR OF WOOD THRUSHES.

try to their summer homes. Smaller ravines, too, tributaries of the original watercourse, intersect the suburbs of our city, and up these come all manner of migrants in search of food and seclusion while resting for a day or two on their long northward journey. "What a paradise for a bird-man!" said I on my arrival in this city of ravines, bridges and maple avenues, and since then the number of my ornithological discoveries has been more than I anticipated.

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On June 6, we found the nest occupied by four newly hatched young, and although they were not at all pretty at first, every day made a wonderful improvement in their appearance. When just hatched, the clumsy little weaklings were almost pitiful to see, but in a few days their eyes were open and their bodies rapidly developing. When nine days old they were quite thrush-like, and we determined to get a photograph before any further advance might render it impossible. Taking his camera along, my friend accompanied me to the nest just before sunset on June 15, and the accompanying photo is the result of our efforts. The oldest soon wondered what we were about, and probably feeling that in the absence of his parents he should be guardian of the younger children, climbed up to the edge of the nest to get a clearer view. Instantly he was "taken", and I am glad to have this permanent record of the early history of one who has since then probably become a distinguished personage in the thrush world. Next day he and two of his companions left the nest, but a weakling was forced to remain a day longer. Then on June 18, the nest was empty, and I was compelled to search dili-

gently through the undergrowth for a chance to observe them further.

The old birds were very busy now supplying food for a family of six adults, and the song of the male was seldom heard except occasionally at sundown. During the day he and the female scoured the ravine and the immediate surroundings thoroughly for food, and the quantities of worms, grubs, insects and berries that the young birds devoured was truly astonishing. Towards the end of the month they were able to do for themselves, and as the mosquitoes were far less interesting and very numerous, I was content to leave the birds to other observers during the holiday season. In September, however, I ventured into the ravine occasionally again, and, finding my old acquaintances without difficulty, kept up my observations until they migrated southward about September 20.

Thus closed my acquaintance with one of the most interesting bird families I have ever met, and although these notes may give nothing new, I trust that the reader will pardon my presumption, as everyone is apt to overestimate a new "find."

THE BUTCHER BIRD IN FLORIDA.

BY MRS. M. A. OHLINGER, Winter Haven, Polk County, Florida.

The Gray Shrike or Butcher Bird, a native of the southern states, is of a pleasing blue gray color above, and of a much lighter hue underneath. In repose, its black wings show a white spot midway of their length, and its black tail sometimes a narrow edge of white, but, during flight, these are more conspicuous. From the center of a black band on either side of its head are visible its bead-like black eyes.

It has a round head, thick neck, and plump body and is, altogether, trim and neat in appearance. It is sometimes called Dentirostral, from the inner edges of its hooked bill being toothed or notched; thus it is enabled to more easily catch and hold its prey, and more readily tear it to pieces. It is also called Excubitor, Sentinel, and Watcher, all having the same meaning, from its habit of watching for prey. Besides this multiplicity of names, it is sometimes designated Logger-head, though I fail to understand why such a bright little body should be accused of stupidity*.

With an acquaintance of several years, I have witnessed many interesting incidents relating to this sturdy little bird. When we first settled here, among the sand hills, in the pine woods there were found, under decaying logs and loosened bark, a great many cockroaches, which seemed to think that as we were destroying their habitations they were entitled to the occupancy of ours. In our destructive war on these pests, the Shrike took the greatest delight, and would perch on shrubbery near the house and watch for any that might be thrown out. A box or drawer that had been unused for some time, would sometimes contain a dozen or more of them; this would be carried into the yard, and the call

"Butchie, Butchie, Butchie" was sure to bring two or three of these birds to their enjoyable feast; and soon every roach was disposed of, as the birds would carry away what could not be eaten at once. If during the hatching season, the bird would feed its mate on the nest. If there were young birds, both parents would quickly supply their wants, then, if a surplus of food was at hand, the insects were stuck on the sharp points of stubby oak twigs, or the small orange trees close by for future use if necessary. Some of the birds, from feeding them in this manner, become so tame that they could be called from any place within hearing, and finally, overcame their natural fear sufficiently to take the food from our hands, or if the food was not forthcoming when desired, a plaintive "To-leet, To-leet, To-leet," from the housetop or a near-by bush, would give warning of their patient waiting. The boys would sometimes dig out field-mice, which were quite plentiful and very destructive to newly planted seeds. On some of these occasions, a Shrike would alight near by, his alert eye watching every movement, and when money, in his efforts to escape his pursuers, thrust his head from the sandy earth, he was eagerly seized, and carried away to be impaled on a sharp thorn or twig to be eaten at leisure.

One writer claims that this voracious little bird always impales its victims alive, while another asserts that the bird assures itself that life is extinct before proceeding to do so. I am not positively sure which is correct, though I have seen large grasshoppers swaying their long legs and chameleons and snakes moving their tails after being thus impaled, yet they, and especially the latter, will do this for some hours

*The name Logger-head does not necessarily involve the idea of stupidity but may have reference to a disproportioned—that is "heavy" or large-head. It is with this sense that the same designation has been applied to various other large-headed animals, as the species otherwise called Hawk-billed turtle, Alligator turtle, and Chub. It has also been given to other birds in the West Indies—kinds of flycatcher. EDITOR.

after being beheaded, when they can reasonably be considered dead.

Of the many things that may be said of this much slandered little bird, its watchfulness and daring are not among the least. It quickly discerns an unusual or unwelcome intruder on its domain, and its loud "Quay, quay, quay" never fails to call other birds to its assistance, where with concerted action, in darting at, and pecking its head, it seldom if ever fails to drive the intruder, though it be a large hawk, or rabbit even, in quest of more congenial quarters. At one time several of these birds clustered about a clump of low saw palmetto bushes, fluttering, calling and seeming very much agitated. On searching for the cause of their trouble, we found it to be a stray white cat, which they had harassed, until it had sought to shield itself from their attacks by hiding beneath the low spreading leaves.

Another specialty of their sharp-seeing eyes is the snake. As soon as a snake is discovered, no matter how large it is, a wild alarm is given, and the birds, including often the mocking bird, (the two, are never so friendly as when arrayed against a common animal), and sometimes the blue jay, collect about it, uniting their voices in general condemnation, and fluttering over and around it, make the most frantic efforts to drive it away. The snakes that we have destroyed, which have been discovered through their assistance, can probably be numbered by the dozens. Individually, they will attack smaller snakes. A few mornings ago I noticed a bird on a branch of an orange tree quite close to the ground. It was busily engaged, its movements seeming to indicate that it was building a nest. I was surprised that it had chosen a location so near the ground. Approaching nearer it flew away, and on investigating further I found that it had only been taking its morning meal; as two or three inches of a small snake were yet pendant from the large thorn which had pierced its head.

These birds take kindly to civilization, and will often follow the plow, picking insects from the fresh turned soil. When removing an old board or rail pile, or raking leaves and trash, a soft "Kloodle, kloodle, kloodle" of inquiry is a sure sign that our little friend is at hand, and on the lookout, and it will alight, almost at one's feet, in order to secure the cricket or beetle that seems liable to make its escape.

They often build in orange or lime trees quite near the house, or in the low oaks surrounding

the fields, their nests seldom being lower than five feet from the ground, and often two or three times that distance.

Their nests, which are rather large, are well built, chiefly of the abundant long gray moss, on a foundation of coarse sticks, lined with fine fibrous grass roots and other soft substances. The eggs, which are five in number, are of a light ashy gray in color, specked and blotched with brown, the blotches almost covering the larger end of the egg.

Baily, in "Our Own Birds", says that, "during the summer season, the Gray Shrike retires to the more northern or mountainous regions, for the purpose of incubation". This, I think, is incorrect, as the Gray Shrike remains with us, here in Florida just south of 28° north latitude, every day in the year, and hatches, at least, two broods of young during the season.

The first nest building begins about the first of March, each year. One year, some particularly tame birds, that had been fed considerably, built in a small lime tree near the house, and as soon as their young were fledged, they were marshaled across the intervening space, and took position in a line on the railing of the front porch; and, there, in the whole company, seven in number including the parents, would unite in a loud and prolonged "Chee, chee, chee", rightly divining that the desired food would, if for no other reason than to hush their discordant noise, be forthcoming. At that time, large herds of cattle were driven farther into the woods; consequently, our windows were filled with large, buzzing flies, which had been left behind, so the needs of the feathered family were easily supplied. They would also eat bits of raw beef or venison, and sometimes a little boiled beef or sweet potato. By this method the parents saved themselves much labor, as they had only to pick the food from the floor, and put it into the youngsters' mouths. Right here, I may mention an incident, true of the young of insect-eating birds, at least, which I learned at this time, and that may be new to some others. It is this: the hard shells of beetles, legs of grasshoppers, and other indigestible food, do not seem to pass beyond the craw of the bird, and when that organ becomes overloaded, the bird would close its eyes, and appear drowsy for a few moments, then open its broad mouth, give a little reactionary gulp, and deposit the compact ball of indigestible compound on the floor, and was, at once, ready again to cater to its voracious appetite.

PECULIAR NESTING OF THE HOODED MERGANSER.

BY GLEN RINKER, Unionville, Missouri.

For several years I have noticed that a few Hooded Mergansers spent the summer on a small lake east of Unionville, Missouri, but could never find their nest, until June 23, 1898. The young could be seen through the month of August, but were very hard to be found, as the lake was in the timber, and full of dead trees and snags. A person could pass within 50 yards of them sitting on a snag or in the water by the side of a log, and not see them without he was looking very close. On the day mentioned, I

was sitting by the side of the lake watching a pair of females, when one of them raised and flew within 20 feet of my head. I was "all eyes" when she alighted on a snag about fifty yards back from me, and I noticed it looked down the hollow several times. I attempted to get closer, but she saw me and flew away. I then proceeded to examine the snag. It was about two feet in diameter and 10 feet high; the top was hollowed out to a depth of about two feet, and looked charred as though it had been

burned. The nest was composed of leaves and some grass and a little moss, and had a complete lining of down. The eggs, 6 in number, were white, and were more round than most duck eggs.

June 13, 1899, found me near the lake again, but farther off in a thicket, watching a Cardinal whose nest I knew was near. To my left was a tall bank where a lot of trees had fallen, and which was overgrown with hazel bushes. I heard a whistle of wings, and looked up just in time to see a Merganser settle down near an old stump. I waited about five or ten minutes, and then walked quietly up to where I saw her light. When about five feet from the place, she jumped up with a quack, and started for the lake.

Now, I have several keys and other books, and they all say the Hooded Merganser nests in hollow trees and stumps, but this nest was on the ground under the roots of the stump, in a sort of a cave that was about fourteen inches back under the stump. The nest was composed of about the same material as the other, but did not have as much down. There were only 4 eggs in the nest so I left it until the 17th when I collected them as only one more had been laid. On blowing them, incubation was just perceptible. The nest was in such a dark place that to photograph it was impossible without over-exposing the outside. The down made the eggs hard to distinguish.*

ROBIN RECITALS AND VARIATIONS.

By P. M. SULLOWAY, Roodhouse, Illinois.

To my knowledge, the singing of the Robin has never received sufficient attention as illustrative of the power of improvisation characteristic of many of our songsters. Whenever I listen to Robin music, I hear phrases of execution that I had not even imagined. One morning last summer I heard the low, squeaky falsetto of a Robin, and soon I espied the performer upon a fence across the road from me. Near him was a female, evidently the inspiration of the impromptu. The song was fairly continuous, yet so low and subdued were the measures that they scarcely reached my ear, and my 12-year old boy, taking a lesson in nature study with me, noticed the peculiar execution of the song and inquired, "What's the matter with that Robin? What makes him sing so low"?

Upon first hearing the song, I fancied that the musician was far across the neighboring meadow; but the high pitch of the song and certain movements of the lyrist set me right as to the origin of the melody. In the fervor and passion of the improviser, he frequently spread his tail slightly, raising it from the drooping position; and crouching somewhat on the rail, with feathers in fluffy disarrangement, he hopped along his perch, either singing as he hopped or else beginning another series of flutings as he shifted further from his lady-love. Every note was uttered in the falsetto, and repeatedly the ardent suiter squeaked his pianissimo madrigals.

Last June, my attention was attracted to a Robin in poetic mood. It was in the forenoon, and I was enjoying the shade of a porch fronting the city street. The familiar carols were in harmony with time and surroundings, and not until I perceived their increasing nearness did I give them special attention. The performer was in contemplative mood, so far as that goes with Robins, for after several repetitions of the softened measures, he yielded to the spirit of reverie and stopped the flow of melody.

Soon another eloquent improvisation claimed my attention. I began to look for the songster upon one of the convenient perches on fence or house-top or in adjacent trees. Another nearer performance directed my gaze to the ground,

and there was the feathered lyrist—the first Robin that had sung for me from such lowly situation. Thus he continued to sing at intervals while hopping over the ground, stopping now and then to express something of his happy lot, and drawing nearer after each stanza as though he sought to interest me in his emotional recital.

One April morning I heard a Robin caroling in a low apple tree. The performer would utter several measures or "trill-er-ees" in the regular contralto of these songsters, and immediately follow them with two or three similar measures in the higher falsetto. He seemed to like the latter style of execution more than the former, for he frequently used the falsetto alone, thus representing a noticeable instance of preference in the expression of his emotions.

There is a question whether the birds are not sometimes deceived in regard to the weather. They are generally reputed to be very weather-wise, but it is a matter of common observation that early Robins and Bluebirds frequently have occasion to regret their hardihood in venturing into the open prairie regions at the first indications of vernal weather. Whether the birds are misled into looking for settled weather, or whether their love of summer associations leads them to brave the uncertainties of northern spring, is not clear.

The actions of a lone Robin on a morning of November last fall led me to reflect that the birds sometimes really mistake the season. My attention was drawn to a Robin song, and in the summit of a leafless cottonwood the lone lyrist was perched, more than half a block from my point of view. His song was not one of the loud, rejoicing carols of a spring evening, but it was wonderfully clear and sweet, vibrating through the genial frosty air of the November morning. For many minutes the songster caroled his measures at intervals, interlarding a few squeaks in approved Robin fashion; then, with several squeaks of alarm, he dropped from his perch and went coursing through the air. Thus I gained a new feature to add to the characterization of our intimate, that of singing

*Mr. Rinker sent, with his article two photographs of the nests with permission to publish if we thought best but, as he has indicated, the conditions were such as to prevent obtaining distinct pictures, and as those taken would not have elucidated his article we do not present them.—EDITOR.

occasionally on the fall migration. The air was peculiarly bland for the time of year; hence I intimated that the tree-top performer may have mistaken the season, intending to execute a lyric to "beautiful spring". However, I am inclined to believe that this joyful and hardy

musician has a song for all times, if we but chance to hear it; and tuning his harp to accord with circumstances, he can burden the air with a flood of ringing alto flutings, or pipe dreamily to his love in the gentlest ripples of melody.

NESTING OF THE BALD EAGLE IN BALTIMORE COUNTY, MD.

BY WM. H. FISHER, Baltimore, Md.

There are possibly eight or ten pairs of Eagles which nest within a fifteen mile radius of Baltimore, and the nest shown in the accompanying photograph has been the object of frequent visits from my friend F. C. Kirkwood and myself within the last few years.

I first saw the nest of these birds on March 5, 1887, but I never had a chance to investigate that one as it was shortly after blown down from the Black Oak in which it was built. The next time I went after them was in company with Mr. Kirkwood, March 29, 1893, and after a hard climb he reached the nest which was 80 feet up in a large Red Oak that stood in a wet place in the woods. The old bird flushed from the nest when we were about 100 yards distant, and flew round overhead "cackling," but keeping well out of gun range. In about ten minutes she was joined by her mate who circled round with her.

The two eggs which were in the nest were about two-thirds incubated, and measured respectively in inches 2.98 x 2.28 and 2.91 x 2.26.

Size of nest, outside dimensions on top, 5 feet 6 inches x 4 feet. Inside cup, 1 foot x 4½ inches. Height of nest 4 feet 5 inches. It was composed of various sized sticks, and lined with straw, dead grass, corn husks and dead leaves.

March 8, 1894, we found the birds had built a new nest about 300 yards from the old one which

had disappeared. This one was 75 feet 4 inches up in a Black Oak, and the bird flushing when we came in sight of her, Mr. Kirkwood adjusted his climbing irons, and going up to the nest, found the set to consist of the unusual number of three eggs, very slightly incubated.

Size of nest, outside, 4 feet 8 inches x 6 feet 6 inches. Height 3 feet.

We only saw the one bird at the nest, and later I heard that the male had been shot two days prior to our taking the set of eggs.

Visiting the nest March 21, 1895, we saw a pair of birds near it, but found the nest empty.

March 30, 1896, we found the nest was built up about 20 inches, and thickly lined with duck feathers. Two eggs were taken, one being about one-fifth incubated, and the other very nearly hatched.

March 21, 1897, there were no birds seen in the vicinity of the nest which evidently had not been added to since last year.

April 8, 1898, we saw an immature bird perched on edge of nest where it seemed to be eating part of a duck. When flushed it circled round for awhile, but did not "cackle" as they have always done when there were eggs, so as this was the only bird seen we did not go up to the nest.

On one visit, April 2, 1899, we saw no signs of the birds at all.

WILD GUINEA-FOWL OF BARBUDA.

BY FREDERICK A. OBER.

Long before THE OSPREY was conceived, and when its editor-in-chief was many years younger than he is now, the writer was commissioned by the Smithsonian Institution to "do" an ornithological exploration of the southernmost islands of the Antilles known as the Caribees.

It may have been luck, more probably it was through the wise direction of the late lamented Professor Baird, or of Professor Henry, whose signature is on my commission; but, though I went at the business rather blindly, and in a somewhat bull-headed fashion, the result, at the end of a two-years' trip, netted at least twenty new birds, and many more somewhat rare that the Institution had not possessed up to that time. All the particulars of their capture, habits and habitat, are given in the various "Reports" of that time, as the birds were classified and described by the then Nestor of American Ornithology, Mr. George N. Lawrence, of New York.

The "popular" finds of my two-years' residence in the islands, of my life in the mountains with the half-wild negroes and Carib Indians were displayed in a book published twenty years ago and called by me "Camps in the Caribees".

As there are limitations to the ordinary book, and as there was not room between its two covers to cram in every adventure I met with, my little excursion from Antigua to Barbuda was left out, and in the course of time was forgotten. After a second voyage to the islands, in which I discovered two more new birds and completed my investigations into the avi-fauna of that group, I switched off, the next year, to Mexico, then to Spain, South America, and other regions; so that the material left out of my "Camps" lay for years unexploited, in a literary way.

Recently, however, having a little leisure, I went through my old note-books, and, amongst other items long since dismissed from memory, found the material which I have embodied in this sketch.

It may be that some details are left out that ought to go in; that some have gone in that should have been left out; and perhaps I did not shoot so many "fowls" as I imagine, at this distance of time, fell to my unerring fowling-piece. But that does not matter much; the guinea-birds are still there; the fallow deer, the

doves, pigeons, etc., and I doubt not the same welcome would be extended a visitor that I myself received a score of years ago.

I do not know if the genial overseer, Mr. Hopkins, is yet alive nor if the hospitable parson who "put me on to" the fallow deer is still caring for the unregenerate blacks; but if they are not, doubtless they left successors, who will accord the visitor a most generous reception. One thing is certain: there is no island of the West Indies better stocked with game of the sort I have mentioned than this of Barbuda.

Along with the negro, when he was torn from his native Africa and transported to the West Indies, came some products of the animal and vegetable kingdoms not enumerated on the manifests. As, for instance, a stock of African superstitions and religious customs which have developed into the serpent sorcery practiced by the mountaineers of Haiti and other islands; guinea grass, guinea corn, and finally guinea birds or fowl, all of which have taken root in the American tropics, and in many places flourished exceedingly.

Like the negro, the guinea-fowl has found the climate and productions of the southern islands just suited to his warm-blooded and vivacious nature, and in certain parts of Cuba, Porto Rico, Jamaica and other smaller islands has become the leading game bird of the country. There is, in fact, no wild feathered game to rival him, either in size or quality, throughout all the West Indies.

While good sport may now and then be had with this bird in a few islands of the Greater Antilles, the only place where the guinea bird fairly swarms is less known and seldom visited. This spot is a small island lying about thirty miles north of Antigua, the seat of government of the Leeward confederation belonging to the British. Antigua can boast of having been a British possession for more than two hundred and sixty years, and, like Barbados, has never been anything but English since it was first settled, about 1682. It was, the Caribs said, too dry for them, and it has proved not much better for the English planters, but they have stuck there with praiseworthy tenacity, and today its capital and only town of Saint Johns is a place of some attractions and consequence.

About thirty years after the planters had settled in Antigua the French from Martinique combined with a band of Carib Indians to ravage the island with fire and sword, taking away all the negro slaves and plundering the white people of everything they possessed, even to the clothing on their backs and the shoes on their feet. For several years after this event the Antiguans were unable to make head against their many calamities, but about the year 1674 there came here, from Barbados, a wealthy and honorable gentleman of distinguished family, Col. Codrington, who set an example to the others by planting the waste lands with sugar cane. He was later made captain general and commander-in-chief of all the Leeward Islands, and thus was the first of a long line of sub-governors, which has existed to the present time.

To Col. Codrington Barbados owes its charming seat of learning, Codrington College, founded by him about 1710, and in many other ways he showed his public spirit and interest in the welfare of these islands.

Col. Codrington, it seems, had an eye to personal aggrandisement, and early in his rule obtained possession of the outlying island of Barbuda. It was not long before he had stocked it with cattle, sheep, fallow deer from England, and guinea fowl, so that we may safely say that the island was made a game preserve more than 200 years ago. And, as those cattle, sheep and deer soon ran wild, while besides the guinea fowl the island was the natural home of doves, pigeons, plover, curlew and many other birds, it goes without saying that Barbuda became so well stocked that royalty itself would not scorn to own it and to shoot there on occasion.

Some negro slaves and an overseer were sent over at the time of the first settlement, and they, too (at least the blacks), obeyed the injunction literally to increase and multiply. At the beginning of this century there were 200 negro residents and one white; on the occasion of my visit, a few years ago, there were about 800 black colored residents, and two white men.

In the year 1813, the British man-of-war, "Woolwich", was wrecked at Barbuda, in a furious hurricane. The officers and crew escaped to the island, which was described by Captain Sullivan. He wrote that it had, at that time, few blacks resident there, and one white man, the overseer or lessee. An income of about \$35,000 was annually derived from wrecks and sales of live-stock. Almost the entire island was covered with wood and the stock ran wild—reckoned at 3,000 cattle, 40,000 sheep, 400 horses, and 300 deer. Bull-hunting was a sport frequently indulged in, with blood-hounds from Puerto Rico. By means of cordons of negroes, vast flocks of sheep were driven upon narrow necks of enclosed land between arms of the sea, and thus easily captured when wanted for market. The wild cattle, when caught, were lashed to the horns of tame oxen, who were then turned loose, and never failed eventually to conduct them to headquarters. Guinea-fowl, even then, were to be found in profusion, also wild duck, plover and snipe in their season, pigeons, turtle-doves, etc. Captain Sullivan mentions the stone castle, built by the Buccaneers, who used to resort here as a rendezvous, after the dispersal of the French and English on St. Kitts, by Don Frederic Toledo, about 1630.

Barbuda is about ten miles long, with an area of seventy-five square miles, the greater portion of which is covered with dense forests of scrubby wood, and a portion only cultivated. There is only land enough cultivated to feed the people living there, and today the vast fields with high stone walls show that more has reverted to original conditions than is now planted.

The first object that attracted my attention as the little sloop in which I had taken passage from Antigua arrived within sight of Barbuda was

a quaint old Martello tower, which once pertained to a castle erected by the buccaneers. There were no other structures of note in sight, and only after a weary walk of about three miles was I cheered by arriving at the "great house," built in the flourishing times of the Codringtons. A great wall had accompanied me along the road, broad topped, high and deeply based, showing that compulsory labor was at one time abundant.

The white gentlemen residing there had leased the island from the Crown and were "working it for all it was worth". One of them was a clergyman of the Church of England and the other a planter bred to the raising of sugar cane and the oversight of laborers; so both together made a very successful combination. As the "parson" was pledged to attend to the spiritual needs of the black people and the overseer to their physical wants, the blacks were contented and happy, apparently. They worked hard in the fields six days in the week, under the eye of the superintendent, and on the seventh attended services at the chapel.

As the island had been without news from outside for many moons, I was made more than welcome, and immediately my wants were made known I was furnished with a horse, a sable servant and dog, who accompanied me on my excursions afield. Our first visit was to a vast inclosure where the guinea fowl were said to be abundant, and we arrived at their scratching ground about mid-afternoon. The dog put up a fine male bird and I let go both barrels at him without touching a feather. It was the same with the second and the third bird that got up and sailed away into the dim distance, like a railroad train making up for lost time.

Puzzled and ashamed at my poor shooting, I vowed that the next flock I saw on the ground should not be allowed to take wing without a pot shot, anyway, but even then there was somehow a discrepancy between my anticipations and realizations. I never in my life before saw such fast birds on the wing nor such rapid ones afoot. They were thoroughly wild, and probably had been for many generations. At last, as the sun was sinking behind the sea grapes on the shore, we approached an old field where my guide said, there was sure to be a flock "dusting", and if warily approached could be taken easily. This time, as the chattering fowl hurled themselves into the air, I caught two of them, right and left, by firing ahead of them about half a rod, it seemed to me. Anyway they tumbled end over end, and I was rewarded for my hours of toil beneath the ardent rays of a tropical sun. The pair weighed seven pounds, and that night we had the tenderer of the two, a comely pullet, roasted for dinner. It was brought to the table garnished with all sorts of good things, the huge platter on which it lay being borne aloft upon the head of a grinning cook who could boast lineal descent from the very first of his line brought to the island by "Massa Codrington". And it was toothsome—the pullet despite the haste with which it had been divested of its feathers and driven direct to the spit. This hurried mode of preparation was

not due to any exigency of the occasion, but to the culinary customs of the tropics. The people have no cold storage, hardly any of them refrigerators, in the islands. The journey from the coop or fowl yard to the pot or spit is only delayed long enough to deprive the victim of such portion of its tegumentary covering and internal arrangements as are considered superfluous; and the hen, cock or chicken that gazes up at you so unsuspectingly as you arrive at the great house an hour or so later may be reposing on a platter with his toes turned up to the ceiling. The smaller fowl, particularly pigeons and chickens, are generally roasted with their feet on, and as they lie on their backs in supplicatory pose they present a most affecting spectacle.

After a refreshing night beneath the mosquito curtains, at dawn next morning I was called for a bath, and then, swallowing a biscuit and cup of strong coffee, was off with my guide for the deer preserves. Whatever may be the heat of the day in those islands, the nights, and early mornings are delightfully cool; so we tramped through the lanes and across the fields to the woods as vigorously as though taking a spin in the north. The woods were dense, and we merely skirted their borders, keeping well in their shadows, for at that hour the deer would be feeding mostly in the open fields. Finally my man pointed eagerly ahead to a bunch of wild cattle grazing quietly about 300 yards away and exclaimed: "Look dah, sah; yander's a fine buck, right close t' dat ole bull. My heart, what ho'ns he got!" Unfortunately for the success of my plans, the cur dog with us, who always jogged at our heels when wanted ahead on the trail, saw or sniffed the deer at the same time, and immediately straightened out his crooked legs and darted off in the direction of the herd, yelping in a way that would have waked the dead. Of course, no deer in possession of his faculties would wait for us after that rude salutation, and there was a lightning-like stampede, not only of three bucks and does, which had been feeding unobserved, but of the wild cattle in whose company they were.

We tramped all that morning, saw several deer at a distance, and signs of an innumerable multitude; but the only real satisfaction I experienced was when William Jack, my guide, after a hard chase, captured and "lambasted dat fool dawg" until he begged for mercy.

A turn in the guinea grounds brought me three fowl, and after an hour or two at the "bull hole", where ground and turtle doves were congregated by hundreds, we went home, laden with spoil.

Said Mr. Hopkins, the overseer, as we sat on the veranda after dinner: "Day after tomorrow is Sunday, and the only day I have off. Just keep shy of the parson and I'll put you up to a bunch of deer that have never been shot at. But mum's the word, my boy".

Said the parson, as he lighted me to my room that night: "I've got my sermon finished, and not much to do tomorrow. I'll take you with me over to the Bat Cave, and if we don't get a fine fat buck, going or coming back, there will be something amiss".

When the overseer saw us ambling off, an hour after sunrise, on Saturday morning, he put his tongue in his cheek and nodded significantly, as much as to say: "Soho, if you go with the parson today then you'll have to attend chapel tomorrow". But he took it good-naturedly. It was a most enjoyable ride, along by the shore to Bat Cave, where the Caribs once camped, and left their stone implements of warfare as tokens of their presence here in the past. Then we routed and followed for awhile a flock of wild sheep, finally coming to a big ceiba tree in the corner of the wall, where the shade was grateful and the protection complete.

Causing our attendant to take the horses back a bit on the trail, the parson asked me to creep up to the wall and look through a chink, at the same time making no noise. I did as directed, wondering, but still on the alert, for I knew there was method in his proceedings, and, applying my eye to the chink in the wall, I saw something that caused me to tremble most violently and clutch my gun convulsively. I glanced at my friend, to assure myself that this was no joke; for there, in front of me, not sixty yards distant from the wall, was a fallow "buck complete", as big and proud as any that ever coursed through English park. The wind was from him to us; so he had suspected nothing; in fact, I could not divest myself of the notion that he was a domesticated animal, and I asked the parson with my eyes if I should shoot. He nodded yes, and shoot I did, with the result that the spare horse we had brought along, and at sight of which Mr. Hopkins had nearly laughed himself into convulsions, was laden with the

biggest buck of the season as we returned homeward that forenoon.

Venison that night for dinner, together with the omnipresent guinea bird and concomitants of tropic vegetables and fruits, made a feast fit for anybody, the remembrance of which, even at this distant day, causes a thrill of happiness to pervade my frame. And the next day not only did I attend chapel myself, but induced the overseer to go with me, much to the joy of the parson, who was nearly overcome by the unusual happening.

Monday morning found me still in pursuit of the wild fowl, but without greater reward than one old bird. In the afternoon, however, Mr. Hopkins took me over to the sea-grape scrub near the buccaneers' tower, and there we loaded ourselves with the rare white-headed pigeons, (*Columba leucocephala*) migratory birds, which came here to feed on the fruit of the sea-grapes. This fruit is about as large as a small purple plum and sweet. The pigeons come from other islands for it and feed upon it voraciously.

As we returned that evening we crossed one of the old fields where the trees were scattered, and as we rode beneath one of them out darted what I thought was a thunderbolt.

"Guinea birds"! shouted the overseer. "Get out your gun!"

I needed no second warning, and when another black projectile shot athwart the sky I fired ahead of it, and three big birds fell crashing to the ground. That was the end of my shooting in Barbuda, for, though I left there bird and beast in abundance, I had gone the rounds and was content.

TWO RARE WARBLERS OBSERVED AT ITHACA,

BY LOUIS AGASSIZ FUERTES, Ithaca, N. Y.

Early in the morning of May 1st, I heard an unfamiliar Warbler note in the trees by my window, and, upon investigation, found it to be that of the Cape May Warbler, (*Dendroica ligurina*). The bird was a male, and after watching it for an hour or two (it remained near the house all that time) and becoming familiar with its notes and appearance, I procured it.

On May 7th, I heard another note new to me, and found to my surprise that there was a male Cerulean Warbler, (*D. rara*) in an elm tree in front of the house. As it was on the Cornell University Campus, and it was Sunday morning, I refrained from shooting the bird, in the hope that it might still be near the next morning. Monday's search, however, failed to reveal it. There was not the slightest doubt that it was a Cerulean, as the bird offered fine views of himself, and, although restless, was very tame and unsuspecting. The song was rich and vig-

orous, suggesting that of the Yellow-rump a little, and might be represented by these syllables: "Chivy, chivy, chivy-claréé", the last being very energetic, and uttered with a rising inflection. My friend Gerald H. Thayer of Scarborough, N. Y., was also present, and identified the bird positively, as a Cerulean Warbler.

Later on May 12th, while watching migrating Warblers in the woods near Ithaca, on the shores of Cayuga Lake, we again heard the curious note, and found its author—the Cerulean—high among the branches by an oak tree. I shot at it, but the distance was too great. The shot failed, and we had lost our second opportunity, as the bird flew a long distance, and could not be found again. We had both seen him well, however, through a powerful fieldglass, and were sure of his identity. The most eastern record I have seen for this bird is Lockport, N. Y., about 100 miles west of Ithaca.

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Comments.

NEW EDITORS.

As announced in the preface of the preceding volume, we have made arrangements with several distinguished gentlemen to co-operate in the editing of the *OSPREY* for the future. We take great pleasure in now introducing them to our subscribers.

Their names are well-known to the readers of the *OSPREY* as well as to ornithologists generally, and with some of them at least, many of our friends are personally acquainted. The gentlemen are Mr. Robert Ridgway, the curator of the Department of Birds of the National Museum; Dr. Leonhard Stejneger, the curator of the Department of Reptiles, and especially eminent as an ornithologist; Mr. Frederic A. Lucas, curator of the Department of Comparative Anatomy, whose articles on the classification of various types are so much esteemed by ornithologists; Dr. Charles W. Richmond, assistant curator of the Department of Birds; Mr. Paul Bartsch and Mr. William Palmer, also of the National Museum, and Mr. Harry C. Oberholser of the Department of Agriculture, all of Washington. Further, Mr. Witmer Stone, who has charge of the ornithological collections of the Academy of Natural Sciences of Philadelphia, at one time the most complete in the world, will also kindly act as an associate editor. The co-

operation of these gentlemen will give a magazine alike useful to the scientific ornithologist and to the inquiring amateur. The popular side of ornithology, however, will be the main feature of the journal for the future as it has been in the past.

CONTROVERSY ABOUT EGG-COLLECTING.

Difference of opinion about the extent to which egg-collecting may be indulged in seems to entail unusual animosity and vehemence of expression. We have received a number of communications from various gentlemen and ladies for and against the stand taken by the editor, as well as in the letters.

The difference between the parties to the controversy is very slight. It is merely as to the number of eggs which may be collected. It is conceded by all that egg-collecting in moderation is permissible. We see no reason for modifying the opinion expressed in the last number of the magazine. In order to render full justice, however, we have made room for a letter from Mr. J. Parker Norris Jr. in refutation of some incautious statements made in the heat of controversy, and another from Dr. Knowlton of an explanatory and exculpatory character. With this (unless new issues are involved) the controversy must cease, so far as we are concerned.

NATURALIST-COLLECTORS.

In connection with the death of John Whitehead, we have reproduced some interesting passages from an article on "Pioneer Naturalists" in the *Spectator* of London. The *Spectator*, however, unduly limits the function of the class under consideration in the statement that "the business of the naturalist-collector is to acquire and bring back to the Museums of Europe new or rare instances of animal life." All the other continents now invoke and pay for his aid. The United States commenced to do so early in its history. Naturalists, such as Bartram, in 1790, who travelled and collected for their own account, may be left out of consideration.

But, as far back as 1819 and 1820, Major Stephen H. Long, in his Expedition to the Rocky Mountains, was accompanied by Thomas Say, one of the most accomplished and versatile naturalists of his age, who collected many unknown birds which he afterwards named and described.

Almost all the expeditions in the "fifties" had good collecting naturalists attached, and one of them, then young and hearty, is still living and a flourishing society, the Cooper Ornithological Club, bears his honored name—James G. Cooper.

The naturalist-collectors that have enriched the National Museum and other collections since then are innumerable.

Nor have the explorations of American naturalist-collectors been confined within the bounds of their own country. (What expedition up to the time of the Challenger had been so fruitful as the Wilkes' Exploring Expedition of 1838-42?) Among them even are several who anticipated Whitehead in his exploration of the Philippine Islands—Dr. J. B. Steere, Prof. Dean C. Worcester, (now one of the Commissioners to the Philippines,) and Dr. Frank S. Bourne.

Another naturalist-collector, Mr. Frederic A. Ober, has explored the West Indies and to his

facile pen we are indebted for the article on the Wild Guinea-fowl of Barbuda which appears in the present number of the OSPREY.

The country of immediate paramount interest—South Africa—has also a museum which sends out or employs naturalist-collectors, and is collecting the material for a series of works on the zoology of the region. It is almost superfluous to add the names of the institution—the South African Museum of Capetown—or its accomplished director—William Lutley Selater.

Various Museums of South America, Australia, India and Japan have also enriched and are still enriching their collections by means of travelling naturalists.

Letters.

PHOTOGRAPHING SCREECH-OWLS.

EDITOR OF THE OSPREY:

HYDE PARK, *June 25, 1899,*

Your letter of recent date was duly received. The pictures you refer to were taken in March, 1897, and the subjects were two Screech Owls, one in the red, and the other in the gray plumage. The lighting was rather poor, and as I had a slow lens, and therefore had to give a

just as I got ready to make the exposure. One might think to look at the result that I had used a ship's hauser to fasten them, but that is one disagreeable effect of getting too close. Well, after I had them fixed just as I wanted them, and drawn out the slide preparatory to making the exposure, one of them concluded that he would rather be somewhere else, and started out to get there. He was brought up rather short



PHOTOGRAPH OF SCREECH-OWLS.

time exposure, it made a somewhat difficult subject.

In the first place I fastened the two sitters to the perch, so as to be sure they would not elope

by the cord, however, and I finally convinced him that he had better stay where he was.

During the excitement his comrade got rather restless and I had some little trouble in getting

them quieted down. And now a new trouble presented itself. Both of the principals persisted in going to sleep, and the only effect of a poke in the ribs was to make them open one eye and look at you reproachfully and then go off again. However, I did finally succeed in getting three exposures, and you can see the results for yourself. In the spring of 1898, I made another attempt: this time it was a young Screech Owl in the gray plumage. I made three exposures, but spoiled the best one on account of using old developer. I enclose copies of the other two herewith. Both of these latter were snap-shots. In the lighter colored one the bird was in the sun, and in the other in the shade. All of these pictures were taken with a 6½ x 8½ lense fitted to a 5 x 7 camera, and taken on a 5 x 7 plate, and the prints cut down to 4 x 5.

The Owls were taken from a hollow tree in the woods near here, and were kept alive for about five months.

Hoping that the above will give you at least a bazy idea of when, where and how the pictures were taken,

I remain yours very truly,

CHAS. R. HIGBEE, JR.,
13 Austin st., Hyde Park, Mass.

DESIRABILITY OF REPRINTING COLLINS' NOTES ON SEA-BIRDS.

EDITOR OF THE OSPREY:

WASHINGTON, *Sept. 2, 1899.*

The article of the Rev. Herbert K. Job ("The Enchanted Isles") in the *OSPREY* for November last (which I have only read recently) interested me greatly, and recalled an article published many years ago by Capt. J. W. Collins. That article was issued in a volume whose title would scarcely attract the attention of an ornithologist or induce him to examine it with the expectation of finding anything of special interest to him. Indeed, I have found that it was unknown to several ornithologists I have asked. It was entitled "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 as bait for catching Codfish by New England fishermen". It was published in the Report for 1882 of the U. S. Commission of Fish and Fisheries (p. 311-335). A plate illustrates "Hag fishing" or the capture by hook and line of the great shear-water (*Puffinus major*) which is called Hag or Hagdon by the fishermen. 12 species or groups of species are commented upon. Captain Collins was for many years master of a vessel engaged in bank fishing and, having been a good observer, his notes are valuable.

Another noteworthy article on Sea Birds I have noticed in my miscellaneous reading has the title "Notes on the birds observed during the cruise of the U. S. F. C. Schooner *Grampus* in the summer of 1887", and was published by Mr. William Palmer in the Proceedings of the U. S. National Museum for 1890, (p. 240-265).

Would it not be well to republish Captain Collins' article in the *OSPREY*? It is a very in-

teresting one, and inaccessible. I am sure, to the great majority of your readers.

Yours truly,

H. A. G.

[The suggestion of our correspondent is a good one, and may be adopted. If room can be found for Capt. Collins' article, it will be published in part at least in the next number. EDITOR.]

A NEW DEVICE FOR AMATEUR PHOTOGRAPHERS.

EDITOR OF THE OSPREY:

WASHINGTON, D. C., *Sept. 12, 1899.*

A propos of your note on a "New device for amateur photographers", I may inform you that some years ago Prof. Marey, the well-known investigator of problems of animal locomotion, devised a camera to be used after the fashion of a gun, and so arranged as to take several consecutive photographs. The apparatus suggested an overgrown, but short, Colt's rifle. I do not know what results were obtained.

Yours truly,

L.

AMENDE HONORABLE OF DR. KNOWLTON TO
MR. NORRIS.

EDITOR OF THE OSPREY:

In my discussion of the crime of excessive egg-collecting in a recent issue of *THE OSPREY*, I made the statement that "it is perfectly evident that Mr. Norris had not the honor of a personal acquaintance with Major Bendire or he would never have dared bring him into this malodorous discussion".

I am now informed that I was in error, and that Mr. Norris did enjoy the privilege of such an acquaintance. I hasten to make the proper acknowledgment, and to observe that Mr. Norris evidently possesses a high order of courage for which I did not give him proper credit. Those who were best acquainted with Major Bendire will readily appreciate the situation when they recall his often expressed opinion on the subject.

In a succeeding paragraph I made the statement that "there was no place in his (Bendire's) economy for frauds and charlatans". This is so manifest a fact that I have learned with great surprise that Mr. Norris has seen fit to apply it to himself and to take offence thereat. It is certainly remarkable that Mr. Norris would be willing to admit that Major Bendire entertained no higher opinion of him than to class him with frauds and charlatans!

As for myself I would be the last person to apply these epithets to one who is so well known among ornithologists generally as Mr. Norris, or one whose collection indicates such an exhaustive acquaintance with the individual peculiarities of the eggs of our birds.

F. H. KNOWLTON.

[Mr. Norris has wronged himself in applying to his own personality the general statement respecting "frauds and charlatans" made by Dr. Knowlton. If we had supposed that such an interpretation would have been put on the remarks in question, we should not have admitted them.

Doubtless there is more room in the sequence of the words for the interpretation that Mr. Norris has forced than we had seen in our hasty perusal, but we did not see any connection lurking in that sequence and Dr. Knowlton has assured us that he did not intend such.—EDITOR.]

THE UTILITY OF LARGE SERIES OF EGGS AND NESTS: A REPLY TO DR. F. H. KNOWLTON.

EDITOR OF THE OSPREY:

In the September number of THE OSPREY, Dr. F. H. Knowlton, under the pretense of criticising "Excessive Egg Collecting", takes the opportunity of making statements about myself which I cannot allow to go unchallenged. What inspired the animus of Dr. Knowlton's article is difficult to imagine, as I have not the honor of his acquaintance.

Dr. Knowlton says "it is perfectly evident that Mr. Norris had not the honor of a personal acquaintance with Major Bendire or he would never have dared to bring him into this malodorous discussion". I knew Major Bendire well for 12 years and many times had the pleasure of showing him my collection—the last time only a little more than a year before his death. He frequently made the assertion that the only scientific way to collect eggs was in series and large series too. Never did he say one word against the size of any of my series. In addition he gave me the names of many collectors from whom I obtained rare and valuable sets. I quote the following from one of Bendire's last letters to me, dated November 20, 1896.

"The eggs you got through me from Price are very scarce and I do not know of any in more than one collection (in Bryant's) and he has not got them all.

"Mr. Anthony, of San Diego, has recently sent me several eggs of the Least, Socorro and Black Petrels from Lower California, more than I care to buy for the collection, which are all new to science, and of which I will let a couple of each species go to some *good collection* if wanted".

So much for my acquaintance with Bendire.

In regard to Dr. Knowlton's assertion that no information of any value has been published regarding the Norris collection, this statement is also untrue. From 1886 to 1893, a series of about 100 articles on Oology written by J. Parker Norris was published in the *Ornithologist and Oologist*.

Mr. W. Brewster praised these articles, saying that he considered them both valuable and interesting. Possibly Dr. Knowlton may consider Mr. Brewster an authority.

In regard to the statement that the collection benefited nobody but its owner, that also is an error. A great many oological specimens have been identified by its owner for young collectors, and quite a number of birds have been found breeding for the first time through suggestions made to collectors by myself. Of course there is only a negative merit in this, but, in addition to this, the collection is, and always has been, open to any student of Ornithology or Oology who desired to inspect it; and any information that I have been asked for has always been

cheerfully given. What more can a Museum collection do than this?

I wish also to take issue with Dr. Knowlton respecting Hummers' and Kentucky Warbler's eggs.

There is but a slight variation in the eggs of any of the Hummers found breeding in the United States with the notable exception of those of *Eugenes fulgens*, which of course are much larger; but the variation in the nests is enormous and Hummers' nests are always preserved with the eggs by all collectors. To cite a case, we will take the Ruby-throated Hummer's nests from Pennsylvania which are invariably covered with lichens, whereas in Iowa the Ruby-throat's nests are usually, if not always, without lichens. To take another case, in California nests of *Trochilus alexanderi* are usually built of sponge-like substance, whereas in Texas they resemble very much the nests of the Ruby-throat from the east. In addition to these facts, there is a great variation in the nests from the same locality, and it would be not at all difficult to select forty nests of the Ruby-throat showing great variation.

As for the hundred and fifty eggs of Red-tailed Hawk, one could not begin to show all the variation that the eggs of that species are subject to in a series of that number.

Now for the nine hundred and seventy eggs of the Kentucky Warbler. It is quite superfluous for Dr. Knowlton to say that he would not collect that number, for if he were more accurate he would say that he could not collect that number, or one-twentieth of that number. It took me three years before I could find one set of eggs of this species, and my series of sets has been the result of twelve years of hard work. This species is most abundant in southeast Pennsylvania, particularly in Chester and Delaware Counties, and there are at least 750 pairs breeding each year in Chester County alone; but the nests are difficult to find and it requires hard work to find even one.

Any person who has carefully gone over a large collection of eggs will find out that the family that shows the most variation in their eggs is the Warblers, and among these birds there is none that show more variation than the Kentucky Warbler's eggs. If anybody doubts this assertion I am quite willing to prove it by showing them my series. I have discovered quite a number of interesting facts from this series, among which are that each set of eggs laid by the same pair of birds has a distinct individuality, which is reproduced every year; that 10 to 12 days after the first set is laid, a second is laid if the first is disturbed, provided the first laying should not be heavily incubated; that the same pair not only returned to the same woods each year but nearly always to the same part of the woods; that when the set is small the eggs are large, and when the set is large the eggs are small; and finally that the average life of a pair of Warblers is from five to eight years. These are a few of the facts that I have learned from my series.

Another reason for my having large series of Warblers' eggs is the fact that for some years past it has been my intention to publish some

day an elaborate monograph on the nesting habits of the North American Warblers. This work will contain a colored plate of the ♂ and ♀ of each species of Warbler, photographs when practicable of the nest and eggs *in situ*, and numerous colored plates of the eggs which will be the best obtainable. The text will be partly original, and partly compilations from the best account of each species so far written.

There will be about 175 figures each of the species of Warblers' eggs that show enormous variation, such as Kentucky Warbler, Ovenbird, Prothonotary Warbler, Magnolia Warbler, Pine Warbler, Maryland Yellow-throat, Chat, etc.; about 50 to 75 figures of species that show great variation, such as Yellow Warbler, Nashville Warbler, Black Poll Warbler, etc.; while a dozen would suffice for species such as Swainson's and Bachman's Warblers, which are normally unspotted. Of course such a work would be very expensive, and as it would be largely a labor of love, it may be quite a long while before it is started, but it shall be started at some time even if I have to wait ten years.

In spite of my taking this large series, I have not decreased the number of pairs of Warblers

in the least. On the contrary I notice an increase every year. The reason for this is that but seldom did I take my second sets from the same pair.

I can substantiate this statement by affidavits to this effect from Messrs. Samuel B. Ladd and Thos. H. Jackson of West Chester, Pa., who are thoroughly familiar with the habits of all Warblers in my locality.

Messrs. Ladd and Jackson are generally considered the two best Ornithologists and Oologists in Pennsylvania and their reputation for field-collecting and veracity makes their statements absolutely conclusive.

In conclusion, let me state that no person who has ever seen a large collection of eggs can truthfully say there is no use in collecting in large series. It will give me the greatest pleasure to prove this assertion by showing my collection to anybody who desires to see.

I also wish to say that I did not start this discussion and dislike writing so much about myself, but I cannot allow mis-statements to be made without contradicting them.

J. PARKER NORRIS, JR.

Notes.

THE BICYCLE AND NATURAL HISTORY have been correlated! According to the Evening Post (New York), "at last a publisher has been found to bless the bicycle. A couple of years ago bicycle riding was made responsible for the falling off of many persons (no pun intended) in literary enthusiasm. The wheel took them away from books, and overcame the allurements of the library. Now, however, one publisher has discovered that the bicycle has at least been the means of awakening an interest in Natural History, and reports as a direct result an increased demand for books on that subject".

THE FOSSIL BIRDS OF NORTH AMERICA have been counted up by Dr. O. P. Hay, and a census taken (not yet published). He has found 102 species representing 59 genera. Of course this must be a very small fraction of those that have lived. This small number results from the ability of birds to escape some dangers that environ mammals, and the consequent rareness of their remains. Although doubtless they have been more numerous in species from an early time than mammals, the remains of the latter are vastly more numerous. More than 1,100 species of the higher class, representing over 400 genera, are known from fossil finds.

NOTE OF THE SPOTTED SCREECH OWL (*Megascops trichopsis*).—Mr. Charles K. Worthen sent me a fine male of this species in July, which had been taken on May 27, 1899, in the Huachuca Mountains, Arizona. The same had the following measurements: bill, 17 mm.; length without bill, 175 mm.; wing, 139 mm.; tail, 75 mm.; tarsus, 27½ mm. These measurements were taken with a pair of compasses. It will be seen that this specimen is a trifle larger than those mentioned in the *Auk*, Vol. xv, No. 2, page 186,

by Mr. Wm. Brewster, but still is not near as large as his type specimen from Mexico.

W. F. HENNINGER.

YELLOW-HEADED BLACKBIRD.—In the January OSPREY, C. L. Webster speaks of this species, giving an experience much like my own. Until the spring of 1892, I had seen but three specimens of this bird, tho' my father—a close observer of birds from the days when Carolina Parakeets were common here—told me they were strays from Iowa, where they were common. In 1892, I visited the swamps of Henry County, about 20 miles distant, and found them nesting in great numbers in the cane patches; but they did not seem to leave these for any distance. Why they were not seen more commonly during migrations I do not know, especially as thousands of Blackbirds used a fine grove on the farm as a roost. No doubt Mr. Webster will find them if he will visit any large marsh during the nesting season.—DR. A. C. MURCHISON, Toulon, Ill., Apr. 3, 1899.

A NEW EXTINCT TYPE OF BIRDS was described by Mr. C. W. Andrews at the meeting of the Zoological Society of London on June 20th. It was of Lower Eocene age, having been found enclosed in a nodule in the London clay of Sheppey. "The specimen indicated a bird which was nearly related to the tropic-bird (*Phaethon*), but in some respects approached the other Steganopods (*e. g.* *Sula*) more closely than *Phaethon* did". The new form was named *Prophaethon Shrubsolei*.

A FOSSIL EGG FROM SOUTH DAKOTA has been described and illustrated with good plates by Dr. O. C. Farrington. The monograph appears as "Publication 35" of the Field Colum-

bian Museum. The formation in which the egg was found is regarded as of "early micocene age", and the layer is supposed to have been an "Anatine bird" or duck. We are glad to say that no Latin name has been given to the species because no distinctive characters are given. Indeed it is not evident why the egg is supposed to have been a duck's, Dr. Farrington and Mr. Bryan to the contrary notwithstanding.

EUROPEAN PHEASANTS AND GROUSE IN VERMONT. From time to time there is mention of Dr. Webb's great estate, Shelburne Farms, in the newspapers. Its extent and the way it is conducted are matters of which not so much is known. It is situated seven miles south of Burlington on the shore of Lake Champlain. The property comprises between 3,000 and 4,000 acres, diversified in meadow, forest and broad and well-tilled fields. It is one of the largest estates east of the Mississippi. Dr. Webb first went to Burlington in 1883, and spent the season in this city. He was so pleased with the surroundings that, in 1884, he bought a track of land about one mile south of the city on the lake shore, and erected a handsome residence. This place he called Oak Ledge. He resided here until 1887, when, desiring a larger place, he purchased what is now known as Shelburne Farms, in the town of Shelburne. Eighteen farms and parts of several other farms were included in the purchase. An army of men was set to work constructing a country house and immense barns and stables, and in building roads, planting trees, transforming this typical Vermont farming region into a great park. Nature had done much for Shelburne Farms in providing a fine location. It would not be easy to find a more beautiful outlook. Lake Champlain, with its Adirondack Mountain wall as a background, lies to the west, and the Green Mountains, the backbone of Vermont, to the east, forming a combination which, for scenic beauty, is most attractive.

The forests on the estate are well stocked with game, much time and money having been spent in the process. A game keeper is employed to look after the preserves. A specialty has been made of breeding English pheasants. These birds are very hard to raise, and there are few pheasant preserves in the country. Dr. Webb has been able, however, to raise them successfully, and the birds are sometimes found even in remote parts of the State. Requests for eggs are constantly being received from all parts of the country. The birds are fed four times a day, coming in response to the keeper's whistle. They are quite tame until the hunting season opens. The annual hunt occurs in November, and is a great event. About thirty men are sent out to beat the bushes and scare the birds. The pheasant is a bird of rapid flight, and becomes very wild after the first day's shooting, scattering to all parts of the surrounding country. There are usually not more than six hunts during the season. Many guests who enjoy shooting are entertained at this time. From 200 to 300 brace are usually shot each season and the tables of many well-known citizens of New York, Vermont and other states

are graced by birds from Shelburne Farms. The preserves have also been stocked with black game, imported from Sweden—a bird about the size of a partridge, very black and very wild—and the capercaillie, about the size of an eagle. The capercaillie have been removed to Ne-ha-sa-ne, Dr. Webb's Adirondack estate. [Condensed from THE SUN, N. Y., Sept. 17, 1899.]

DR. A. B. MEYER, the distinguished director of the Royal Zoological and Anthropological Museum of Dresden, has been recently visiting the United States. He landed at New York on the 8th of August, and spent nearly a fortnight in the city of Washington, arriving there on the fourteenth. The ornithologists and other naturalists greeted him with great pleasure. His visit was with reference especially to Museum construction and arrangement. Dr. Meyer has brought together in Dresden one of the most complete collections of the Birds of Paradise extant, and was the first to describe some of the most remarkable types of that group. At an interview with the president, he gave his ideas of the Philippine islanders as well as the islands.

THE DEATH OF JOHN WHITEHEAD, "the eminent field-naturalist and collector", deserves special record in the OSPREY on account of his association with the recently acquired American possessions, the Philippine Islands, whose avifauna he explored so long and successfully. Mr. Whitehead was born in 1856, and died on the second of June, 1899, in the Chinese Island of Hainan. He had started in the fall of 1898 from England with the intention of making a second visit to the Philippines and reached Manila, but the unfortunate complications prevailing forbade the carrying out his plans and, as the next best thing, he went to the island where he lost his life from an attack of "pestifential fever".

Nearly three years from the close of 1893 to about the middle of 1896, were devoted by Mr. Whitehead to the Avifauna of the Philippine Archipelago. The results of this exploration in those islands were recorded by Mr. W. R. Ogilvie Grant in ten articles "on the birds of the Philippine Islands", published in the *Ibis* during 1894, 1895, 1896 and 1897, in which the species of different regions were successively considered.

It has been announced by Mr. P. L. Selater that Mr. Whitehead, "before leaving" for the Philippine Islands, "placed in the hands of the editors of the *Ibis* a series of valuable field notes on the birds collected during his last journey. These will appear in the forthcoming volume" of the journal.

The *Spectator* of London has an excellent article on Mr. Whitehead as a representative of "pioneer naturalists." It is well said that "Mr. Whitehead was a representative of a class to which scientific natural history owes a debt, and whose life and adventures are often among the most attractive of all records of exploration. The business of the naturalist-collector is to acquire and bring back to the museums of

Europe new or rare instances of animal life. The range of his activity is only bounded by the extent of his knowledge, unless, as in the case of Mr. Whitehead, he prefers to limit his efforts to some special branch of inquiry".

* * * * *

Most of the regions in which the naturalist-collector now spends his time are in the area of the tropical forest, whether on continents or islands in either hemisphere; and in these lands of mystery and twilight, of high temperature and torrential rains, the natives themselves can scarcely endure the trials of the climate. Yet the collector cannot make flying visits. When he goes to a new district, he goes to stay. He must form a camp and a permanent headquarters; must there prepare, pack, and dispatch his specimens; write his notes on their appearance when first obtained, for the guidance of those at home; and label, index, and describe them, so that the scientific naturalist at home may find each item complete in itself. Examples of the care and ingenuity of the collectors are so common that they excite little surprise amongst those who receive the work at home. Those less conversant with the accurate methods of the modern naturalist will not be slow to appreciate his power of taking pains.

* * * * *

We take the liberty of further drawing upon the Spectator for a notice of Whitehead's work in the Philippine Islands.

"Unlike the author of 'The Malay Archipelago,' whose discoveries range from the capture of the "largest, the most perfect, and the most beautiful of all butterflies" to the anthropoid apes, Mr. Whitehead confined himself to the study of birds. In the woods his genius for outdoor observation was equalled by his skill in managing the natives whom he employed. His eye was so keen that no new species ever seemed to escape it, and his patience such that he could "outwait" even the sulky children of the woods. If they sat down and refused to move, he sat down by their side and waited till they changed their minds. In the Philippines he worked for months in forests under perpetual rain, at a height of 5,000 ft. Yet the specimens he brought home were as perfectly preserved as if he had been at work in the rooms of the British Museum. Not the least of the trials of the pioneer naturalist is that he is, as a rule, alone. The collector's life outside the beaten track of travel is one long series of experiments and minor adventures. Each day's work, each new expedition from the temporary camp, comes from the initiative of the man himself, as inclination or reflection suggests. Two are too many for such conditions. You cannot defer to a friend as to whether you shall go to the top of a mountain or only halfway up. Mr. Whitehead always made his expeditions alone, from the first humble beginning, when in Corsica he discovered a new nuthatch and added it to the list of European birds, to the final journey to Hainan. He visited Borneo, climbed the great mountain of Kina Balu, and brought back forty-one new species of birds from that region. He also

explored the birds of the island of Palawan, where he found more new species. But his most interesting work was in the Upper Philippines. In this expedition he made the most striking ornithological discovery of recent times.—the great forest eagle of Samar.* The only skin of an adult bird of this species is that sent home by him, which is now among the treasures of the British Museum of Natural History. It is far too precious for exhibition, but its portraits and dimensions are given in the *Ibis* in a paper by Mr. Ogilvie Grant. Its combined weapons of beak and claw are more formidable than those of any other bird, and its weight about one-half greater than that of the golden eagle. Like all forest birds, it has short wings, but the length of the body is no less remarkable than its weight. Some of the most interesting of the smaller Philippine birds collected by Mr. Whitehead are shown, together with their nests, in the cases in the bird gallery at the Museum, among them being a series of sun-birds, diminutive creatures with the colours of Humming-birds, but of more prosaic shape. That called after its discoverer has a black head, with purple iridescence, a black back, and a crimson belly; others are scarlet, purple, black, and yellow.

"But the nests of these little birds, which Mr. Whitehead obtained and sent over to this country in perfect condition, together with the leaves to which they were attached, are more interesting than the birds themselves. Many of them are of shapes and materials quite unlike any seen elsewhere, and absolutely different from any of the "stock designs" of nests made by European birds. Some of the "flower-peckers'" nests are shaped like a flat purse or alms bag. The entrance to this is not on either side, but in the end, in which is a slit through which the little bird creeps into the flat-sided bag. This is suspended from a branch, or from the inside of a large drooping tropical leaf, which completely hides the nest from in front. The most beautiful is that of the blood-breasted flower-pecker, which like others, hangs from a large fleshy leaf. It looks as if made up from small square fragments of dead rose petals (though this is not the real material), the colour being that of "old rose." How the material is fastened together is not obvious, but apparently by weaving over it single threads of spider's silk. The inducement to undertake these expeditions is usually pure love of discovery and, in a minor degree, the taste for "collecting." The time must be approaching when there will be no more unknown birds or beasts to discover. Then the explorer will perforce fall back on the less exciting search for new insects, or new plants and flowers. The botanists and florists have still a field before them, and a new orchid is a valuable discovery, and a new dye or fibre plant potential wealth. If the green indigo, reputed to exist in some country in the Far East, were found, its discoverer's fortune would be made; and a real rival to indiarubber, or a substitute for Manila hemp, would enrich a whole community".

*The reference to the forest eagle of Samar in the above account is not strictly correct. Probably the first specimen of this bird ever collected was obtained by Messrs. Bourns and Worcester, on the island of Negros, about 1891. This specimen is in the collection of the Minnesota Academy of Sciences.—C. W. R.

Literature.

A NEW SYNOPSIS AVIUM, by Dr. Alphonso Dubois, is announced. Dr. Dubois is the keeper (conservateur) of the Royal Museum of Natural History of Belgium, and the author of numerous works and articles on zoology. He has been engaged for more than 12 years in the preparation of the new work. He gives the following data covering the "form of publication" in French, English and German.

"The *Synopsis Avium* will appear in quarterly numbers, composed of 96 pages. The complete work will consist of about 7 numbers, illustrated by several coloured plates representing new or hitherto unfigured species; one plate will replace a sheet of text.

"The price per number is fixed at 6 francs (4 s. 10 d. = 1 dollar 20 cents); but after the issue of the 3^d number it will be raised, for new subscribers only, to 9 francs (7 s. 2 d. = 1 dollar 80 cents).

"As the edition will be limited and also depend on the number of subscriptions, those desiring to do so are requested to fill in, and address their subscribers form [sic!] without delay, to one of the undermentioned booksellers; it will be to their interest to subscribe from the commencement, to avoid the later augmentation of the price".

The generic names will be given (with synonyms) and the species will follow in systematic order preceded by a serial number (but without duplications of generic names) with references to some plates, and with designation of habitat in a separate column.

The "undermentioned bookseller" for the United States is G. E. Stechert, 9 E 16th street, N. Y. The new synopsis is essentially on the same lines as the old Handlist of G. R. Gray (in 3 volumes) and the new Handlist of Sharpe now passing through the press.

THE BIRDS OF SOUTH AFRICA will be the first published of a series to be entitled "The Fauna of South Africa". The series will be edited by Mr. William L. Sclater, director of the South African Museum of Cape Town, and published by R. H. Porter, of London. Each volume will be of 8vo. size and illustrated by woodcuts in the text.

PESTS OF THE WIRE are the subjects of an article in the English Illustrated Magazine and among the illustrations is one which represents a "Woodpecker boring holes in tele-

graph posts in Norway". As was long ago observed, the Woodpecker is supposed to be "deluded by the humming of the wires in the wind like an Aeolian harp, and fancies that there is a nest of insects inside the pole. To reach them he toils for days, and pecks great holes into the wooden posts, or even through and through them" To what extent have similar movements been observed in this country?

SMITHSONIAN INSTITUTION, UNITED STATES NATIONAL MUSEUM. Proceedings of the United States National Museum, Volume XXI. Washington: Government Printing Office 1899. [8vo. xiii, 933 p., 89 pl.]—In this volume have been combined papers which have appeared from November, 1898, to June 26, 1899. Three of the articles relate to ornithology: A revision of the Wrens of the Genus *Thryomanes* Sclater, by Harry C. Oberholser, (p. 421-450); The Birds of the Kuril Islands, by Leonhard Stegner, (p. 269-296; and The Feather-tracts of North American Grouse and Quail, by Hubert Lyman Clark, (p. 641-653, pl. 47-49).—G.

AVES HAWAIIENSES: The Birds of the Sandwich Islands. By Scott B. Wilson, F. Z. S., F. R. G. S., assisted by A. H. Evans, M. A., F. Z. S.—London: R. H. Porter, 7 Princes street, Cavendish Square, W. [4to]. It is a great satisfaction to us to be able to announce the completion of Wilson and Evans' *Aves Hawaiienses*, the concluding parts, vii and viii, having been received a short time ago. A more extended notice of this important work will appear in our next number. In this connection we may be excused for expressing the hope that Rothschild's "*Avifauna of Laysan*" may also be brought to a happy conclusion within a short time.—S.

NAUMANN'S NATURGESCHICHTE DER VÖGEL MITTEL-EUROPAS is being published in a new edition by F. E. Köhler in Gera-Untermhaus. It is to be completed in 120 Lieferungs, (the price of each is 1 mark.) and 12 volumes. 45 Lieferungs had already appeared in March: these formed 3 volumes, ii, v and vi. Volume vi is a monograph of the birds of prey. The great classical work is being revised by a number of ornithologists in different parts of Germany.

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BREEDING OF THE FISH CROW IN PENNSYLVANIA.

By FRANK L. BURNS, Berwyn, Pa.

Corvus ossifragus, belonging essentially to the maritime fauna, is hardly accredited as anything more than a rare migrant or winter visitant to the banks of the Susquehanna river, scarcely north of the Maryland line, and to the Delaware river as far as Honesburg, in so inland a state as Pennsylvania. While it may breed sparingly, and of course locally, in the river—bordering counties of Lancaster and Delaware, the only instance at all specific is the statement by Dr. Warren in *Birds of Pennsylvania*, 1890, "that 'J. Hoopes Matlack informed me that some years ago he found the nest and eggs along the Brandywine creek, Chester county'".

Therefore it was with much pleasure not unmixed with surprise that I found the Fish Crow to be a resident and breeder during the past year, 1898, on the slaty ridge known as the North Chester Valley Hills, so far from any considerable body of water. I first heard its hoarse notes on the 13th and again on the 18th of April, but it was not until the 11th of May that I fully established its identity, and located the nest of a pair not more than a mile from Berwyn. The bird always appears to be making unsuccessful efforts to free its throat of some obstruction when uttering its notes, and for a time one is constantly expecting to hear the comparatively clear and high "caw" of *C. americanus* break out. Its notes are coarse and nasal, as well as somewhat flat, when compared to those of the commoner species. Sometimes *car*, more frequently *cah*, with now and then a *cah-ah*, and again a *koak* or *koak-ah*.

The female flushed from her nest and two eggs, 32 feet up in a red cedar, close to a wheat field, while I was yet 25 yards distant in the thick wood; and being joined by her mate their croaks issued from the timber beyond. On returning to collect the set on the 18th, I was discovered while yet some distance from the grove by several of the commoner species with young in the vicinity. They flew overhead uttering loud protests, and were almost immediately joined by as many as six Fish Crows, easily identified by their smaller size, hoarse notes, and manner of soaring about. I had stirred up a perfect mob, but they kept a good distance above me, safe from the efforts of a shot-gun,

had I been disposed to use one. Apparently some irate farmer had sufficiently scared them for their own complete safety, as one of the smaller species had several secondaries missing from the right wing. Perhaps the additional four were the young of a previous season. The place is an ideal one for the more timid kind, no dwellings intervening within a range of probably three hundred acres of fields and timber well watered by small streams.

The nest, which had been vacated at the first alarm, contained five eggs in which incubation had commenced, measuring 1.42×1.09 , 1.35×1.08 , 1.41×1.06 , 1.37×1.03 , 1.27×1.00 , and are typical in shape and coloration. Thirty-three eggs taken at Avalon Beach, N. J., by Mr. Lionel F. Bowers and the writer some few years ago, average 1.47×1.07 to the 1.37×1.05 of the above set. The nest rested on a branch and the main stem at the very top of the tree, and outwardly differed but little in measurements and construction from that of the American Crow, except that a layer of earth was absent and a neater appearance was presented. It was composed of coarse twigs, small sticks, strips of inner bark and wild grapevine bark, lined with fine inner bark and wisps of black horse hairs. The inside measured in depth 3.25, diameter 5.50, being thus somewhat less, and the outside measurements—depth 16.50, diameter 17.75—were somewhat greater than the average of seven New Jersey nests.

Later in the month, I discovered the same or another pair inhabiting a piece of timber within a few hundred yards of my home. They were always ready to take up arms for their larger brethren, and even indignantly protested against the robbing of a Broad-winged Hawk. This pair were observed daily, particularly early in the morning, from my home, until the middle of June, and a month subsequent when they were seen occasionally. On the 30th of July the pair appeared with three young in tow, flying in single file; the old birds croaked to their young and received replies in the yet imperfect voices of their progeny. As this interesting family had not been molested they came and went with the perfect confidence their beneficial habits entitled them to assume, often alighting on the

railroad track to gather up the grain, or on shade trees close to houses, and once the whole family settled in our little fifteen foot Tyson pear tree within a few yards of the porch, where the weakling of the young clamored with open mouth for food.

As it is said to winter south of our state line, I kept a daily record of its occurrence, expecting it to disappear at any time in the fall. The young were not seen after December 13th, but the old birds have not deserted their haunts, not joining the great flocks and roosts of *C. americanus* even in the coldest weather, apparently roosting in a nearby small cedar grove. During the month of March, they have appeared at their feeding ground about the railroad by 5.45 o'clock in the morning. I feel positive that they are of recent and local introduction. Perhaps the locality will prove congenial, and their permanency be assured.

This bird is a great favorite of the farmer, as

it diligently helps to rid the fruit-trees and berry bushes of their insect enemies, but never insists on appropriating the choicest and best priced of their fruits to its own use, as a reward for its industry. Indeed so highly is it esteemed, that I confess to a few twinges of conscience, this morning, when I abstracted a couple of eggs from the nest of a happy pair as the nucleus of a future collection; but, as three eggs were yet left in the nest, I consoled myself by the reflection that I could have taken as many more without causing the parents distress, as I have often heard it said, that none of the feathered kingdom are capable of counting beyond *one*; the truth of this statement we see exemplified in the domestic hen, who seldom abandons her nest as long as it contains the customary nest egg. I might mention many other pleasing incidents, relating to this bird, but they would, probably, prove less interesting to others, than to us, under whose observation it daily comes.

DUSKY, OR SOME TRAITS OF A CANARY BIRD.

BY MIRIAM ZIEBER, Philadelphia, Pa.

A couple of years ago when Marks Brothers', large department store in Philadelphia, Pa., was selling canary birds, the son of a friend of mine decided upon buying a rather scrubby looking bird with dark plumage.

"Oh, don't take that one!" said his mother, but Harry wanted no other.

"The man says it was born in Germany, mamma".

"I guess so", laughed his mother.

But, however that may be, Dusky, as he was afterwards named, began at once to distinguish himself. He no sooner was purchased than in some manner he got out of his cage (probably the door of it became ajar) and flew to another part of the store. Harry, much concerned, begged the salesman not to let his treasure get away. With very little trouble the fly-away was caught, promptly returned to its cage, and carried to what was hereafter to be its home.

Of course, the first thing Harry did was to provide it most abundantly with food and drink, at the same time remarking on its fearlessness; there was no fluttering whatever—only a keen interest in what was taking place; the cup of water was no sooner placed at the side of the cage than this remarkable bird made an effort to get into it, ducking its head repeatedly.

"It wants a bath", cried the family, who had gathered around the barred home of the new arrival.

So the bird's bath tub was filled with water, and put into the cage.

Then the fun began. Such splashing! It seemed as if that bird was determined to take a year's washing in advance in case he should not have the chance of another bath. After it was over it took him an hour to plume himself to his satisfaction.

He is the cleanest of his kind, wanting his bath every day.

But his intelligence shows to the best advantage when he is let out of his cage. He appears to be delighted with the liberty allowed him;

everything and everybody is used for a perch. All any member of the family has to do in order to become a resting place for the dear little winged creature is to say—

"Tweet, tweet; Dusky, come to me".

Down comes the tiny fellow from mirror, mantle piece, back of chair or whatever he happens to be on, and makes straight for the top of the head of the person who called him. If the head moves too much, its feathery occupant hops to the shoulders.

It is very amusing to watch him as he inquisitively peers up into the person's face. Every few seconds he gently pecks at the corner of the mouth of any one on whose shoulder he has alighted.

But the most wonderful thing of all is, that if he is told to sing he will at once start to do so. The request must be accompanied by a sound resembling the word *rush* or *swish* or anything with *sh* in it. Dusky at once ceases his explorations around the room, settles himself to his music, and sends forth the most beautiful song, seemingly in a perfect rapture.

When anyone is sewing, as she draws the thread out of the goods, Dusky flies on the hand of the sewer, and unless put off, remains there some minutes, going up and down with the hand.

He gathers all the threads and shreds of things he can find and carries them to the tops of the places he uses to perch upon.

All this is so delightful that one feels inclined to give that bird "a good squeeze", the fear of crushing it alone helping one to resist the temptation.

Indeed one might receive a good pecking, as this accomplished creature does not at all relish being handled. It prefers literally to keep human beings under its feet, not having the least desire to feel even the fingers of one of them on its head or its back.

When it is required to enter its cage again one has but to hold out one's finger, upon which it

will readily hop, and present the open door of the cage for its consideration; it will at once enter and sing as if glad to get back.

It is so very glad to be alive, so joyous.

Last summer it was taken to the country. Two large cats were residents of the farmhouse. One day, when nobody was watching, these cats, in trying to get at the bird, with a great clatter upset its home. Never a note uttered Dusky until the cage was set upright again when he commenced to sing with all his might, whether in defiance to the cats or in thanks to those who rescued him, I, of course, cannot say.

These statements may appear almost incred-

ible when made about a very common looking canary bird, but every one of them is quite true. It seems to be a case of "looks are nothing, it's all in the behavior".

He is perfectly fearless; no swishing of clothes nor sudden movements have the least power to disturb his serene birdship.

He was very young when purchased, yet began to act as described from the very first day.

Can it be that back of him is a long line of ancestry which have been tamed and well trained?

This seems to be the only explanation for his marvelous conduct.

THE SHEARWATERS AND FULMAR AS BIRDS AND BAIT.

BY CAPT. J. W. COLLINS.

EDITORIAL INTRODUCTION.

Many who have taken the trip northward to Europe must have watched with interest from the deck of the vessel in which they were traveling, while crossing or near the Grand Bank of Newfoundland, the numerous birds which are to be seen in that region under favorable conditions. These winged wanderers serve not a little to relieve the tedium of a sea voyage. Of the many records of such birds, Capt. J. W. Collins has given in some respects the fullest.

In accordance with the suggestion of a correspondent in the last number of the *OSPREY* and through the courtesy of the U. S. Fish Commission, we reproduce herewith a portion of Capt. Collins' article called for therein. Capt. Collins' article was entitled "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 as bait for catching Codfish by New England Fishermen". This is contained in the tenth annual report (Part X) of the Commissioner, being that for the year 1882 and published in 1884, and extends from page 311 to 338. The entire article is valuable and contains much information that cannot be found elsewhere. But that portion which relates to the Shearwaters and Fulmar is the most complete, the most interesting and the most pertinent to the title, inasmuch as species of that genus (*Puffinus*) afford—or did afford—most of the bait. We have, therefore, reprinted only Capt. Collins' notes on the Shearwaters and the allied Fulmar. Our limited space forbids giving more—at least for the present.

It should be remarked also that systematic angling for birds to be used as bait is a feature of the past, as it has been practically abandoned now. Nevertheless its history is of interest and the observations recorded may be borne in mind by those who shall cross the ocean on the way to Europe or cruise on the Grand Bank.

INTRODUCTORY NOTE.

For many years after the introduction of trawl-line fishing in New England birds were extensively used for bait to eke out the supply obtained from other sources, and even prior to the time when trawls came into use old fishermen say that they caught birds on the banks

with which they baited their hand lines. Several varieties of birds were obtained for bait, principal among which may be mentioned the hagdons (*Puffinus major* and *P. fuliginosus*); the jagers, of several species; fulmars, gulls, and petrels or Mother Carey chickens.

Birds were used much more extensively before 1875 than they have been since, as of late years it has generally been found more profitable to depend on other sources for a bait supply. They have never been used for bait in any great numbers, except by trawling schooners on the Grand Bank, and these vessels were said to be engaged in "shack-fishing".

The term "shack-fishing", it may be explained, owes its origin to the kind of material used as bait, the word "shack" being applied to refuse or offal. The vessels procuring fares in this manner were called "shack-fishermen." They usually resorted to the Banks in early spring, carrying a limited amount of salt clams, salt squid, or menhaden slivers, which were intended to be used in commencing the fishing season, and to eke out any deficiency which might occur in the bait supply. The fishing being well under way, the crews depended upon such bait as they could procure on the Banks, such as birds, small halibut, porpoises, and sometimes codfish; all of which, together with the contents of the stomachs of the cod, which often consisted largely of bank clams and occasionally young squid and capelin, were called "shack", or "shack bait".

A fisherman preparing a bird for shack-bait cuts off the feet, tail, and neck; then, making a cut across the breast, he strips off the skin and throws it overboard. Having removed the skins and viscera (the latter makes an excellent bait) from as many birds as he has at hand, he pounds the bodies with the back of a heavy knife or stick, breaking the bones, or, as he would term it, "mummies them up". This beaten and bruised mass of flesh and bones is then cut up into small pieces of suitable sizes to be used as bait. At this point the fisherman is influenced by the number of birds he has on hand. Should the supply be bountiful, he divides the bodies into comparatively large sections, while, on the other hand, if the birds are scarce, he must exercise the strictest economy, and subdivides the material into correspondingly small pieces, large enough only to "point the hook", while an infer-

ior and less desirable bait may be used on the shanks.

On some parts of the Grand Bank cod are found in great abundance, and the clams taken from the "pokes" (stomachs) often furnish a considerable percentage of the requisite amount of bait for the trip. The roes of the cod, when partially developed, are also used as bait, since they make a fairly attractive lure, and if properly attached to the hooks cannot be easily pulled off by the fish. When this bait is used the "pea" is cut into strips in such a manner that they may be turned inside out; the hook is then passed through and through the membranous covering in several places, a turn being made around the shank each time.

Shack-fishing differs from other styles of Bank fishing only in the method of obtaining bait supplies. A vessel engaged in shack-fishing remains on the Bank until she has secured her fare, and, as before stated, depends solely upon getting her bait on the ground instead of—as is the custom of other vessels—leaving the Bank and running into the harbors of Newfoundland and Nova Scotia to obtain a "baiting" of herring, capelin, or squid.

The method of shack-fishing has its advantages and disadvantages. One of the advantages, and a very important one, is that no time is lost in seeking bait, and the vessel is enabled to prosecute her fishing on the bank whenever favorable days occur. On the other hand it must be acknowledged that the kind of bait employed by the shack-fishermen is comparatively unattractive to the fish, and the supply sometimes has of late years been inadequate; consequently, it has generally been found more profitable for our bankers to obtain supplies of fresh bait in the provincial ports. At the present shack-fishing is rarely undertaken. It may be worthy of mention, however, to state that fine fares of cod have been obtained by this method as late as 1874-'75, and, indeed, this mode of capture has, since then, sometimes been preferred by the most experienced fishermen, especially when cod have been extremely abundant on the Banks; for when a large school of fish is around a vessel a fisherman is very reluctant to heave in cable and fill away, even for "fresh baiting".

As birds were considered as good or better than any other kind of shack bait, and as they could often be taken in large numbers, it will readily be understood their presence on the fishing banks often was of material aid to the fishermen in securing their fares of cod.

In these notes the writer expects to do nothing more than to give, in an off-hand, and, perhaps, rather disconnected manner, the result of his study of the habits and methods of capture of these sea birds, which for many years were his almost daily companions; the chief object being, of course, to convey some idea of the importance of several species as a source of bait supply to our fishermen.

THE GREAT SHEARWATER (*Puffinus major*).*

This species, the "hagdon", or "hag", of the fishermen is, perhaps, one of the most interesting which is to be found on the outer fishing grounds; it is used for bait more than any other bird, and has many peculiarities essentially its own. It has a wide distribution in the western Atlantic, and I have myself observed it all the way from latitude 39° 50' N., longitude 71° 25' W., to north of the Grand Bank in latitude 47°, longitude 50°.† The place of its greatest abundance, however, is probably from near Le Have Bank to, and including, the Grand Bank, the latter locality seemingly being its favorite resort during the summer season. There it occurs in remarkable numbers for several months of the year; indeed, so abundant is the species that, in many cases, as will be shown further on, it has become of considerable importance as a source of bait supply for the cod fishermen on that bank. It appears on the fishing ground usually in the latter part of May or about the 1st of June. In a daily journal kept by myself I find the following note, under date of May 26, 1879: "I saw a hag this morning, the first I have seen this spring".‡ This bird was probably a straggler from the large flocks, and very likely it reached the fishing ground sooner than its companions. Three days later, however, on May 29, when in latitude 43° 35' N., and longitude 59° 47' W., I saw several large flocks of these birds, and shot one individual. The birds were at that time sitting on the water, and had apparently just reached the locality. Their stay on the Banks continues until about the middle or last of October (occasionally later), when they gather in flocks, sitting around on the water for a few days before taking their departure.

Occasionally, in midsummer, they seem to be scarce, but what the cause of this scarcity is I am unable to say. Under date of August 1, 1879, I find the following note: "Shot three hags, but they are very scarce". I am somewhat inclined to the opinion that they find abundance of squid at that season, and therefore do not come about the vessels so much as when hungry. When or where the hagdon breeds is unknown to me. My opinion is that it breeds in winter. I have opened many hundreds of these birds, but have never found their sexual organs in a condition that would indicate they were incubating.

It may be well, in this connection, to allude to the social habits of the hagdon as they have come under my observation. When the birds reach their destination in the spring, for a few days after their arrival, they do not seem to make any special effort for the purpose of securing food, but pass most of their time sitting in large numbers on the water, and at this period it is somewhat difficult to catch them on hook and line. Occasionally a flock will make a short flight and again settle down, but there appears to be a strong inclination, at that time, to huddle together and keep up the organization

*It is altogether possible, perhaps probable, that there may be other species of *Puffinus* which frequent the fishing banks, besides the two I have named in these notes. On several occasions I have seen birds of this genus which were much smaller than *P. major*, and which I then thought were the young of that species, but I now believe they were a smaller variety. My object, however, is not to define the species, but simply to give some idea of the habits of the birds.

†Mr. Ridgway tells me that *P. major* is found as far south as Cape Horn or vicinity.

‡Our position at that time was latitude 43° 10'; longitude 62° 23'.

which has probably existed during their migration from distant regions. The same thing in regard to going in flocks is noticeable in the fall when they collect for their autumnal migration from the fishing-banks. At such times they show the same disinclination to bite at hook and line that they exhibit when first arriving on the fishing-grounds. This apparent indifference to food at such times is all the more remarkable, since only a few days elapse after the flocks have reached the fishing-grounds in the spring before they break up; and in a little while after the arrival of the haddon it may be seen skimming the surface of the water on a tireless wing, totally unmindful of the presence or absence of its companions, unless, indeed, their appearance may indicate where food is abundant; in such cases it loses no time, but rapidly wings its way to join them in the feast. Nor does it do this from any feeling of sociability, if we may judge from its actions, but simply to gratify its enormous appetite. In doing this it fights and struggles with all other birds, whether of its own kind or of other species, to gain possession of the finest morsels, uttering, meanwhile, extremely harsh and discordant notes. When feeding it displays a dash and pugnacity that is perfectly astonishing. The audacious boldness with which it will attack superior strength in the struggle for food, and the ferocity and reckless bravery it exhibits on such occasions cannot fail to command the attention of all who witness the performance. Nothing can exceed the activity of the hag or its intrepid recklessness, if I may so term it, when in pursuit of food, and, when very hungry, it seems to pay almost as little regard to the presence of man as to the proximity of other birds.

The tenacity of life exhibited by *Puffinus* is certainly surprising. It often happens that after its skull has been crushed between the teeth of its captors, a haddon may lie seemingly dead for several minutes and then recover sufficiently to make desperate efforts to escape. In several instances which I can recall, hags that were thought to be dead have escaped by "flopping" out over the slanting stern of the dory, unnoticed by the fishermen until it was too late to recover the wounded birds.

The tenacity of life and the remarkable pugnacity of these birds have, upon many occasions, provoked the fishermen to the cruel sport of tormenting them and prolonging their sufferings. Perhaps a dozen or more hags may be caught, and having been put in a hog-head-tub, or in a "gurry-pen", on the deck of the vessel, the fishermen bring about an internecine war by stirring them up with a stick. At such times the birds evidently imagine that their companions are avowed enemies, and, pitching into their nearest neighbors, a general fight and terrible commotion ensue, while the feathers fly in all directions, much to the amusement of the men. In a short time the birds which were taken from the water sleek and strong, are utterly worn out, in their struggles with one another, and present a bedraggled, forsaken, and disreputable appear-

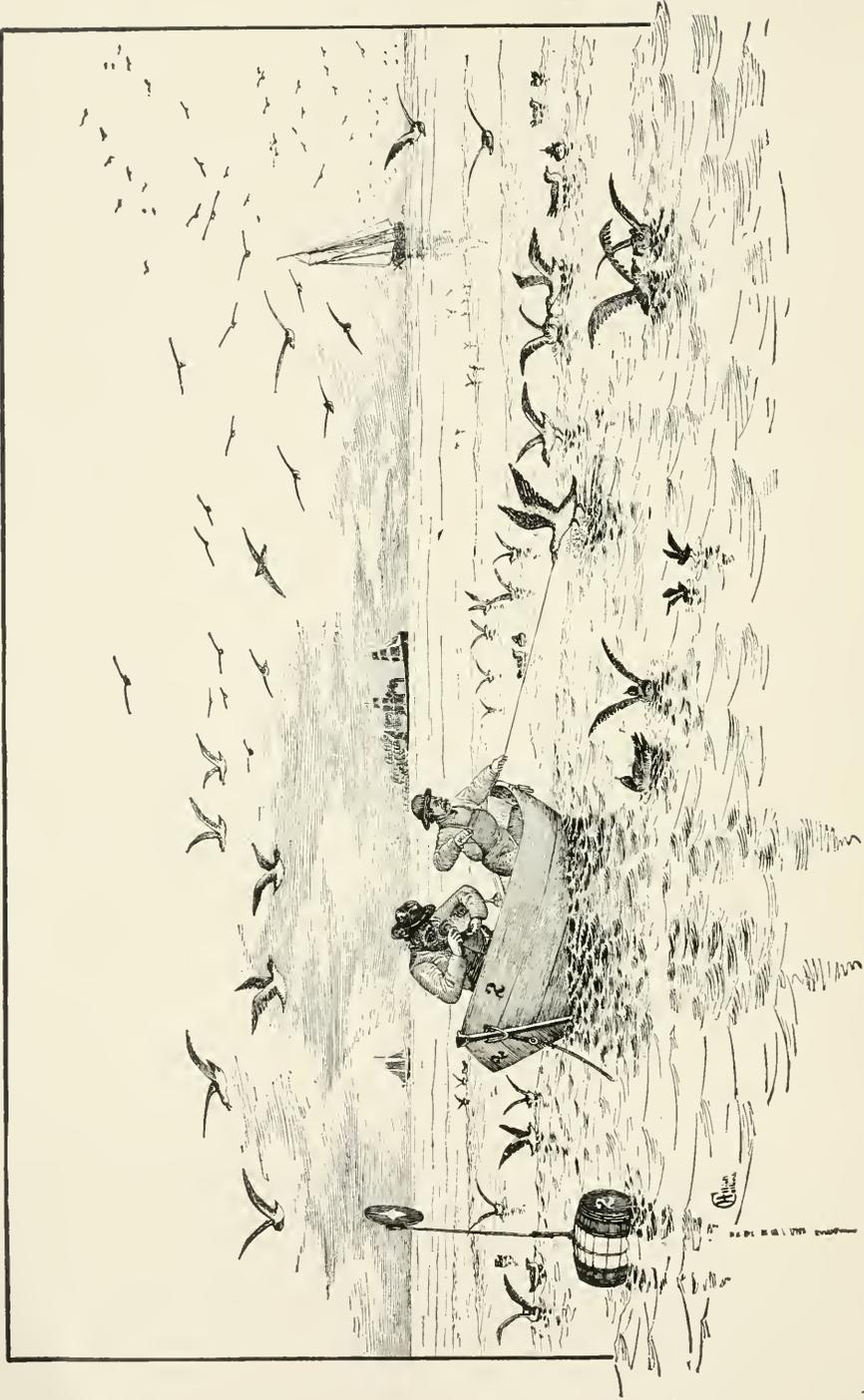
ance. The fishermen also sometimes tie two hags by the legs, using a string about one foot in length, which enables the birds to swim, but keeps them in unpleasant contact, the consequence being that they fight until one or both succumb.

The haddon is remarkably strong and swift in its flight. Often it may be seen skimming over the waves, passing from the top of one sea to another, scarcely moving a muscle; but by trimming its wings, if such an expression is allowable, first poised on one wing and then on the other, it is apparently propelled without an effort on its part, but simply by the action of the wind beneath. This method of flight, however, is frequently varied, for when necessary the haddon can and does move its wings with great power and considerable rapidity. When in pursuit of food it plunges suddenly down into the water, striking on its breast with great violence, and in a manner quite different from that in which gulls alight. Its methods of diving is also different from that of many other species. It never plunges head first into the water as do the gamet, kingfisher, and many other piscivorous birds; but it first alights upon the surface, as just noted, disappearing almost instantly. It is an active swimmer under water, and when in pursuit of food passes rapidly from one object to another, provided it cannot eat the first thing which attracts its attention. When the haddon finds food agreeable to its taste, it immediately rises to the surface and hastily swallows the morsel, if it is not too large. This manner of eating is necessary as a matter of self-protection, for if the bird delays swallowing its food, it will soon have to dispute its right of possession with its companions.

It is a common occurrence for a number of these birds to chase a boat for half an hour or more at a time, diving like a flash, every few minutes, after the bubbles made by the oars, which these winged rangers seem to imagine some kind of food beneath the surface of the water. Nor will repeated failures discourage them in making these attempts. They will also persistently follow a dory from which a trawl is being set, and diving in the wake of the boat, after the sinking gear, make desperate endeavors to tear the bait from the hooks. In these attempts they are often successful, much to the chagrin of the fishermen whose chances for catching fish are thus materially diminished by these daring robbers.*

The voracity and fearlessness which are thus so strikingly displayed by the haddon offers the fishermen an opportunity to administer what they consider retributive justice, since the capture of these birds is thus made a comparatively easy task. Formerly, as has been stated, when shack-fishing was extensively carried on by the Grand Bank codfishermen, great numbers of *Puffinus* were caught for bait with hook and line. Before proceeding to describe the methods of capture I shall refer to the food of these birds. From my observations I am of the opinion that the hag subsists chiefly on squid, which of

*My brother, Capt. D. E. Collins, tells me that on several occasions he distinctly recollects that haddons were caught on trawl-lines belonging to his vessel, the hooks having fastened in the beak or throat of the greedy birds, which had swallowed the bait before they had torn it from the sinking gear.



HAG FISHING.

course, it catches at or near the surface of the water. I have opened many hundreds of them, and have never, to my recollection, failed to find in their stomachs either portions of the squid, or, at least, squid's bills. It may be interesting also to mention the fact that in the fall of 1875, when the giant *Cephalopods*, or "big squid", were found on the eastern part of the Grand Bank between the parallels 44° and 45° north latitude, and the meridians of $49^{\circ} 30'$ and $50^{\circ} 30'$ west longitude, flocks of hagdons were invariably found feeding on the dead "devil-fish" which were floating on the water. In nearly all cases these "big squid" were found in a mutilated condition, usually with their tentacles eaten off almost to their heads, and the fishermen soon learned to detect their presence by the large flocks of birds collected about them. The small species of fish which frequent the waters of the eastern fishing-banks, such as the laut, capelin, etc., also furnish *Puffinus* with a portion of its food. But birds of this species, as well as most all others found at sea, are excessively fond of oily food, and especially the livers of the *Gadidae*, cod, hake, etc., and this extreme fondness for codfish livers, which they swallow with great avidity, renders their capture possible by the fishermen with hook and line. "Hag-fishing", as it is called, can be carried on either from the side of a schooner or from dories, though usually better results are obtained by the men going out in the latter at some distance from the vessel. When it is desirable to obtain these birds for bait the morning is usually selected to effect their capture, since at that time they are generally more eager for food than later in the day, when they are frequently gorged with the offal thrown from the fishing vessels, or with food obtained from other sources. It is generally the case, therefore, that two men engaged in hauling a trawl in a dory, after having obtained a sufficient number of cod to supply them with the requisite amount of livers, stop hauling their gear and proceed to "toll" up the birds. In order to do this pieces of liver are thrown out, which immediately entice the ever-present petrels or Mother Carey chickens that gather in flocks around the floating morsels and dancing up and down upon the water, tear the swimming particles into pieces small enough for them to swallow. If the weather is clear the keen eye of the nearest hagdons quickly detects this gathering of small birds near the boat, and thither he wends his way to scatter the little Mother Carey chickens right and left by his audacious aggression, while he swallows, with indescribable eagerness, the pieces of floating liver, uttering, meanwhile, his harsh and disagreeable note. Not many minutes elapse before other birds—hagdons, jagers, and other species, perhaps—may be seen coming from all points of the compass, and in a short time a large flock collect about the boat. If the weather is thick the programme is slightly varied. The birds are then attracted by the fishermen imitating their cries, and also, perhaps by their scenting the oily liver floating on the waves. I am assured by an excellent authority—Dr. Elliott Cones—that all the birds of this family are provided with imperfect organs of smell; but, nevertheless, both the hag and the Mother Carey

chicken exhibits some peculiarities which so strongly resemble those of a dog working up a scent that it may not be out of place to call attention to the subject here. On many occasions, during the prevalence of a fog, when not a bird of any kind had been seen for hours, I have thrown out, as an experiment, pieces of liver to ascertain if any birds could be attracted to the side of the vessel. As the particles of liver floated away, going slowly astern of the schooner, only a short time would pass before either a Mother Carey chicken or a hag, generally the former, could be seen coming up from the leeward out of the fog, flying backward and forward across the vessel's wake, seemingly working up the scent until the floating pieces of liver were reached. If the first bird to arrive should be a Mother Carey chicken, and the liver too large for it to attack alone, which was generally the case, the petrel would at once fly away, and in a few minutes three or four could be seen returning. This suggests a question as to whether the petrel went to seek assistance or not in order that he might share with his coadjutors the feast which he could not well obtain unassisted; but should the first one to appear be a hag he does not seek companionship, but with a greedy yell he pounces upon the pieces of liver and swallows them with the voracity characteristic of the species, and no sooner has he devoured one morsel than he is off on the wing seeking for more. However, it is generally the case that a flock of hagdons soon gather, whatever may be the density of the fog, unless birds are very rare on the Bank or, perhaps, rendered indifferent to food by a recent feast.

Having made this seemingly necessary digression to explain the method of "tolling up" and gathering the flocks of birds about the dory, I shall now proceed to describe the *modus operandi* of their capture.

The two men in a dory, one aft and the other forward, are each provided with a line 5 or 6 fathoms in length, and a small hook, such as is ordinarily used for catching mackerel. The bait, consisting of pieces of codfish liver, is large enough to float the hook as well as to cover its point. The hooks are baited and thrown out as soon as a flock of hagdons have collected about the boat, and there also may be, and generally are, birds of other species. Should there be a large number of hags, and more especially if they have been without food for a short time, they display an almost indescribable voracity. In their eagerness to obtain the large pieces of liver, which they swallow at a gulp, as they fight among themselves, they do not seem to care whether a hook is concealed within the bait or not. At such times the birds may be easily caught, and are rapidly pulled in by the fishermen, who usually derive much gratification from the sport, not only from the excitement it affords, but also on account of the prospective profits which may result in obtaining a good supply of birds for bait. When a victim has been hooked, and is being pulled towards the boat, it struggles most energetically to make its escape by vainly endeavoring to rise in the air, or by spreading out its feet to hold itself back as much as possible as it is dragged unceremoniously over the water, while its vociferous

companions follow after it, attempting to snatch away the piece of liver with which it has been decoyed. At times a bird may succeed in disengaging the hook from its beak, but usually the barbed point is well fastened and the hag is landed in the boat. A fisherman then places it under his left arm to prevent its struggles, and grasping the head of the unfortunate bird with his right hand he crushes its skull with his teeth. Or he may try to deprive his victim of life by wringing its neck, striking it on the head with a "gob stick", etc. This may continue until one hundred or perhaps two hundred birds are captured, but usually not so many. A comparatively short time passes before some of the birds become gorged with the pieces of liver which they have obtained, and then they exhibit the greatest cunning in eluding capture. They seem to be fully conscious of the fact that within the liver there is concealed something which, for their own good, they should avoid. With a wonderful instinct that almost approaches reason, they cautiously approach and take hold of the bait with the tips of their bills, and by flapping their wings, endeavor to tear it to pieces. In this maneuver the birds are often successful, and as a reward for their enterprise they secure a good lunch, which they hasten to devour, as the disappointed and disgruntled fisherman rebaits his hook with the hope of decoying some less wary individuals. It frequently happens, however, that a skillful "bait stealer" renders abortive all the attempts of the fishermen to effect its capture, while at the same time it will fight desperately with its intruding companions, to keep them away until it has filled itself to repletion. Having satiated itself until scarcely able to clear the water, it quietly drifts to leeward at a safe distance from the boat, floating upon the waves to await the digestion of its food, and apparently to take in the situation. So greedy, however, are many of these birds that oftentimes they seem to leave, with great reluctance, the place where food is plentiful, even though they may be gorged to such an extent that they can eat no more. I have often, on such occasions, seen them lingering near the boat, looking upon a tempting piece of liver apparently with an expression indicative of regret that they could not find room for it. Frequently these greedy and garrulous birds also quarrel with their companions and attempt to drive them away from the food which they desire, but cannot accommodate. Of course their endeavors are futile, for while they are opposing one, others rush in and devour the liver.

When hags are abundant recruits are constantly arriving, and congregate in great numbers wherever food can be obtained. Eager to secure a share in the feast, the newcomers rush ravenously forward and swallow the pieces of liver, and are quickly pulled in by the fishermen,

who, after killing them in the manner described, detach them from the hooks, and throw them in the bottom of the boat.

After awhile, however, the whole flock usually evinces a shyness which renders the sport unprofitable, and the men then employ themselves in hauling their trawls, or they go aboard the vessel.* If a sufficient quantity has been taken to more than supply the wants of the day, the birds are hung up around the booms and on the stern of the vessel. A few years ago it was not an unusual sight to see from two hundred to five hundred birds, more or less, of this species, suspended from a Grand Banker. In this manner they may be kept for several days without becoming worthless for baiting purposes, and, if eviscerated, they will keep fresh a much longer time. Indeed, I am told that in the fall it has been a common custom for the Marblehead bankers to save quite a number of these birds and bring them home in a fresh condition from the Banks, the hagdons being simply eviscerated and hung up in the hold of the vessel.

These birds are eaten to some extent by the fishermen of the present day. Forty or fifty years ago, and even earlier, this species formed an important item in the bill of fare of a Grand Bank codfisherman. Although they have rather a "fishy" flavor, which is not especially agreeable to a delicate palate, they are nevertheless, when properly cooked, an agreeable change for the table of a fisherman who has been absent from home several months, and, consequently, has not had an opportunity of obtaining fresh messes other than fish. At present, when our fishermen are enabled to get much better food than any other class of sea-faring men, hagdons "pot-pies" or "stews" are not so tempting to them as they were to the codfishermen of an earlier date. I am told by persons who have knowledge of the fact, that some of the old Marblehead fishermen who had been in the habit of eating the hagdons for many years, acquired such a taste for the peculiar flavor of the bird, that they actually preferred it to the domestic fowl; and when no longer able to engage in the bank-fisheries, would look to the younger men for their supplies of hags, which were brought home in the manner just referred to, on the Grand Bank vessels.

THE BLACK HAGDON, OR SOOTY SHEARWATER (*Puffinus fuliginosus*).

The sooty shearwater, or the "black hagdons" of the fishermen, is invariably found with *Puffinus major*, and doubtless, occurs over very nearly the same area. It is less plentiful on the fishing-banks, however, and, as a rough estimate, I should say that it does not exceed in abundance more than 1 per cent. of the numbers

*It may be stated here that the capture of hagdons may occur at any time of the day and under different circumstances from those above mentioned; but the description given represents the most common method adopted. The birds are also often caught towards evening after the trawls have been set for the night, or from a dory paid astern of the schooner. In the former case, the men, after setting their gear, make their boat fast to the outer buoy of the trawl, and having enticed a flock of birds around their boat, they proceed to catch as many of the hagdons as is possible in the manner described. Ordinarily these birds are not caught to any great extent from vessels, except when the roughness of the weather renders it undesirable to go out in the dories, or when an unusually large and hungry flock has been collected alongside, attracted by the offal thrown out while dressing fish. At such times the men usually stand on both sides of the quarter-deck and catch the birds in the manner that has already been mentioned, except that wooden floats are occasionally attached to the lines a foot or two above the hook.

of the great shearwater. Its habits are very similar to those which I have mentioned as being peculiar to the common hagdon, and with the exception that possibly it is a little less noisy, the description of the habits of one species may be applied to the other. As the two species mingle freely together, the black hagdon is often captured with its less sooty companions, and is, of course, also used for bait by the "shack" fishermen.

THE FULMAR (*Fulmarus glacialis*).

This species, known by a variety of names to the New England fishermen, such as "noddie", "marbleheader", and "oil bird"—called a "stinker" on the west coast—is found on the fishing banks north of Cape Cod in winter, and also occurs in greater or less abundance from Sable Island northwardly, during the summer months, though it is most numerous in this region during cold weather. The following notes from my journal, which were made while near the northwest part of the Grand Bank, may prove of interest in this connection:

February 7, 1879.—On western edge of the Grand Bank, latitude 44° 25' N., longitude 52° 58' W., "I saw several noddies this morning, but for some reason they would not come alongside of the vessel. I have seen one or more every day (since January 30), but have had no chance to get any".

February 8, 1879.—Same place as above. "Saw some noddies this morning and shot one, but did not get him".

March 11, 1879, in latitude 45° 9', longitude 54° 58', I shot four noddies, and the following entry is made in my journal under date of March 12: "There have been great numbers of noddies today. I shot two; but when the vessel swung into the trough of the sea I could not shoot any more".

"March 14. Have seen large numbers of noddies this trip, and almost every day since we have been here some of the burgomaster gulls—a large white species. I shot several of the noddies to-day, but the gulls are shy, and it is difficult to approach them near enough to obtain a shot".

I will add that the weather during the above-mentioned time was extremely cold. On April 13 of the same year I made the following note: "I have not seen a noddie this trip". We had then been at sea about one week. On April 18, 1879, we were on Green Bank, when the following entry was made: "I saw a noddie to-day for the first time this trip".

June 5, 1879. Eastern part of Banquereau. "I have noticed a noddie now and then for the last three days, but have not seen any before for some time".

Under date of July 29, 1879, the following entry is made: "I have seen no noddies this trip".*

The plumage of this species varies in color; that of some of the birds is of a uniform smoky gray, and of others white, with black wings, and some of the other feathers bluish.

The fulmars are probably more abundant on the Grand Bank than on any other of the fishing-

grounds commonly resorted to by American vessels, with the exception perhaps, of the halibut grounds in Davis Straits, or the Flemish Cap to the eastward of Grand Bank, which are not visited by many fishing schooners.

The marbleheader is quite as greedy as the hagdon, and quite as bold when in pursuit of food; but unlike the latter, which is always quarrelsome and noisy, the fulmar confines itself to a sort of chuckling sound, somewhat resembling a low grunt. It will swallow a piece of cod liver with even as great voracity as the hag, but it rarely, if ever, seems to exercise the cunning or caution of the latter in trying to avoid the hook, and, as a consequence, it is more easily captured. It is caught in the same manner as the hag, but owing to its comparatively small numbers on the fishing-grounds, the fishermen do not depend upon it so much as a source of bait supply as upon *Puffinus major*, since one would be likely to catch twenty, or perhaps many more, of the latter, to one noddie. When caught on a line and hauled into the boat it frequently emits quantities of oily matter from its nostrils, and often disgorges its food. This peculiarity of the species which is not common to the hagdon, has been remarked by others. The hagdon will occasionally throw up the contents of its stomach when caught, but not as a rule, so far as I have been able to observe.

The fulmar subsists chiefly on small fishes, and, doubtless, participates with the hagdon in the pursuit of the squid; but I have no recollection of noticing in its stomach, as I have in that of the hag, the presence of pieces of squid or the beaks of that animal. I have, however, frequently observed that the contents of the stomachs of many of this species consisted almost entirely of small fish. Like *Puffinus*, it is very fond of oily food, which it swallows with astonishing greediness. It devours large quantities of codfish liver in a ravenous manner that would astound one unacquainted with its habits, and it certainly would tax their credulity to believe statements that might be made bearing on this subject.

The fulmar is essentially an Arctic bird and occurs in great abundance in the North, where it is met with by whalers and halibut fishermen in summer, at which season, according to the accounts given by Arctic explorers, it goes there for the purpose of incubation.

"The fulmar is the constant companion of the whale-fisher", says Scoresby, in his Arctic Regions: "It is highly amusing to observe the voracity with which they seize the pieces of fat that fall in their way; the size and quantity of the pieces they take at a meal; the curious chuckling noise which, in their anxiety for dispatch, they always make, and the jealousy with which they view, and the boldness with which they attack any of this species that are engaged in devouring the finest morsels. The fulmar never dives but when incited to do it by the appearance of a morsel of fat under water". These peculiarities of the species agree exactly with my own observations.

The fulmar has frequently a ragged appearance; the wings and tail-feathers being fagged

*It may be offered as an explanation here that I was collecting these birds for scientific purposes, and therefore, preferred to shoot them instead of catching them on a line.

out and the bird is often soiled with grease. They have a rank, pungent smell, which is exceedingly disagreeable. Notwithstanding its boldness when in pursuit of food, and its apparent indifference to the presence of man, frequently coming within a few feet of the side of a boat or vessel, rivaling in this respect the most daring feats of the hagdon, it is, nevertheless, entirely different from the latter so far as its pugnacity is concerned. Although it may struggle to get the food which another bird is trying to swallow, it does not exhibit such a fierce disposition as the hag, and when caught rarely attempts to bite. This is all the more strange since this bird has a sharp and very powerful hooked beak. Its flight is similar to that of *Puffinus*, and its manner of alighting on

the water when in pursuit of food is also much the same. The noddy, however, as has been mentioned, rarely dives for food, and, so far as I have observed, goes but a short distance beneath the water, evincing, in this respect, far less activity and enterprise than the hagdon. It is never eaten by the fishermen; its disagreeable, repulsive odor rendering it undesirable as food.

It may be added here that Capt. Henry O. Smith, of Salem, Mass., tells me that the fulmar frequently occurs in considerable abundance in winter in Fortune Bay, Newfoundland, and he also says that on one occasion he killed one of these birds in that region, which had a half-swallowed herring in its beak, the fish being too large for the noddy to get down.

NEST OF DUCK HAWKS IN NEW JERSEY.

BY WM. P. LEMMON, Englewood, N. J.

On April 8th, I found a nest of Duck Hawks (*Falco p. anatum*) on the Palisades about two miles above Englewood, N. J. It was placed on a small ledge of rock some 75 feet from the top, and the same distance from the bottom. The top of the cliff is about 200 or 250 feet above the Hudson River, but the perpendicular rock is only about one-half of this, the rest being broken away at an angle of 45 degrees.

There were four eggs in the nest then, and incubation had just begun. On the 12th, a friend and I went up to the spot at daylight, armed with guns, camera, and a long rope. The female was on the nest when we got there, but left at once uttering the discordant cry of "Ca-a-a, ca, ca, ca, ca, ca, ca, ca", which was kept up at intervals, as long as we were there. The male soon appeared on the scene, and the pair circled around over the river, now and then making a dash for the cliff, only to turn when just out of reach of our guns. We lay out on a point waiting for a shot until, after one or two attempts, we decided that the birds could not be procured in that way. We then walked away about 100 yards, and waited about fifteen minutes until the female returned to the nest, when I crept up to get a shot at her. But just as I raised my head above the edge, she saw me and dashed away out over the river.

I then built a blind of cedar boughs, and repeated the trick, with the same result. After

two more failures, I came to the conclusion that the only way to get a shot, was to remain in a position to shoot as soon as the bird should return to the nest. This I accordingly did and after patiently awaiting for ten minutes, with my gun to my shoulder, I had the satisfaction of dropping the bird to the foot of the cliffs.

The rope then came into play, and having fastened one end to a tree, I threw the other over the edge and went down hand-over-hand. At the bottom I found my bird, wounded but not dead, as I found to my sorrow; for before I killed it, it succeeded in tearing my trousers and lacerating my thumb. The male was not procured.

Not being able to get to the nest on that day, we came home, but on the 23rd, returned with a roller to place on the edge of the cliff, a rope, and last but not least, four companions.

The nest was duly reached, and by swinging out from the cliff, and holding myself there with my feet, I made four exposures of the nest, and got three good ones. The rope was hauled up and my brother was lowered from a point a few yards away, whence he made a photo. After I was pulled up, my brother went down and made three exposures, all of which were good.

The date on which the nest was found, April 8th, is the earliest on record for this vicinity.

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Comments.

POPULAR IGNORANCE OF BIRDS.

Although birds are favorites of the people generally and presumably better known to the average moderately educated than any other class of animals, we are frequently struck by the ignorance displayed in the daily and weekly press. At the present moment the following paragraph is going the rounds.

A BIRD WITH A MONKEY FACE.

NORWICH, N. Y., *Nor.* 6.—A new kind of bird has been discovered in the steeple of the Broad Street Church, high above the bell. N. J. Sherman, whose business place is near the church, climbed into the steeple to investigate the source of a peculiar cooing noise. He found a large bird on a nest full of young ones. She flew off into a tree and as she alighted the branch broke and the bird came to the ground. It seemed dazed and was captured. The bird has a peculiar face, like a monkey, and is large. It is at present confined in a cage, while its owner has written to authorities on ornithology to enquire as to the species. A bird of its kind has never been seen in this region before. The young birds were also captured.

Now it will be evident to any one having even a slight knowledge of ornithology that this notice is one of a very common owl—a species more likely to be seen in the warmer parts of the United States than any other. It is one that

makes use of the structures of man to a greater extent than any other species, so that it has been called the Barn Owl and *the* Common Owl. It is apt also to make its presence known, especially in winter or during the breeding season, by its own outcry (it is also called in common with others Screech Owl) as well as by the cries of its young in the evening. Yet in a considerable town (Norwich has a population of over 6,000 inhabitants) there was apparently no one who could tell what the bird was! It is noteworthy, then, that a resemblance or suggestive likeness to a Monkey's face was seen or imagined independently by the people of Norwich, and thus was confirmed the aptness of another name (Monkey Owl) that has been given to the species. True, it is not a common species in central New York, but some one of a large population should be able to identify it. In almost every well illustrated bird book an illustration is given and it is to be seen in almost every extensive collection of live birds.

But Norwich is by no means exceptional in manifestation of ignorance respecting birds nor is the case now cited the only instance of the Barn Owl appearing as a rare and unknown bird. Indeed, a number of cases could be cited of its posturing in the role. For instance, not long ago, in a city not far from Washington an owl was caught and widely noticed in the newspapers. It was advertised as the Monkey Owl and attracted quite a large number of visitors at the cost of an admission fee of ten cents each, and the fortunate proprietor claimed to have been offered \$500 for it! He refused the offer—or said he did—and kindly offered it to the National Museum—for a consideration. His agent saw with amazement—apparently real—many mounted and stuffed specimens in the Museum and live examples in the Zoological Gardens. What was the after history is unknown to us, but the ignorance was patent.

The present generation of children will not be as ignorant in some parts of the country at least as the past. In Washington the presence of whole schools of children with their teachers may be frequently noticed in the National Museum and the Smithsonian Institution, and the interest which the youngsters take in the mounted birds and other animals shows how strong the bent of youth is towards nature. The resolution just reached in Philadelphia and which is referred to in the notes of this number of the OSPREY is another evidence of the awakening of the people to the advantage gained by in-

creased acquaintance with nature. Let us hope that the good work may be continued.

MEETING OF THE AMERICAN ORNITHOLOGISTS UNION.

The Seventeenth Meeting of the American Ornithologists' Union will be held in the Academy of Natural Sciences of Philadelphia during the week commencing Monday, November 13th. The Monday session will be in the evening (8 p. m.) and for business only, including election of officers. The open sessions will begin at 11 a. m. on Tuesday, Wednesday and Thursday.

The meeting will doubtless be one of more than ordinary interest. Philadelphia was long the chief home of American Ornithology and the Academy of Natural Science of Philadelphia its favored temple. Half a century ago and for a couple of decades or more later its collection of birds was universally admitted to be the most extensive in the world. An eminently capable judge—one who knew most of the continental museums through visits to them—Mr. Philip Sclater, in "Notes on the Birds in the Museum of the Academy of Natural Sciences of Philadelphia" (1857), testified to this excellence of its avian treasures. He declared that "the collection of the Academy of Natural Sciences of Philadelphia is certainly the best zoological collection in the New World, and in the particular department of Ornithology, and perhaps one or two other points, is probably superior to every Museum in Europe, and therefore the most perfect in existence".

Things and collections have much changed during the present generation, however, and the ornithological collections of the Academy no longer holds the first place. Indeed they have been left far behind.

The pre-eminence of the Academy was in fact long ago lost. No successor to Wilson arose. Stagnation ensued. Meanwhile other institutions progressed and one by one left the Academy behind. The British Museum especially advanced with giant leaps very far in advance of any other Institution so far as its avian collections are concerned. Learned and zealous English Naturalists, gifted with large means as

well as ornithological knowledge, supplemented with rich stores the accumulations which its own great resources enabled it to purchase. The accomplished ornithologist in charge of its avian treasures—Dr. Bowdler Sharpe—not only efficiently administered the collection but attracted the confidence as well as esteem of his compatriots and fellow students. Instead of waiting till death should part them from their riches, several English gentlemen deposited with, or freely gave, the fruits of their researches to the Museum during their lifetime. What Wilson did for the Academy has been done on even a greater scale by English gentlemen for the British Museum. First in magnitude was the surpassingly rich collection—especially rich in Indian Birds—of Allan G. Hume who gave it to the Museum in 1887. Only of secondary importance because overshadowed by the unparalleled gift of Hume were other collections, notably the Ramsay-Tweeddale, the Salvin-Godman and the Seebohm ones. No other Museum has enjoyed such benefactions.

Since the Academy fell into its lethargy, conditions and modes of preservation and exhibition have radically changed. A new generation has arisen and already modern methods have been applied to the administration of the Academy's ornithological department and competent men of the new school have been installed in charge. Already the Academy has awakened from its long sleep, and though it will never regain the pre-eminence it has lost, it may take rank with the next class and advance with equal pace. Mr. Witmer Stone, the present custodian of the birds, is familiar with the modern requirements as well as the literature of ornithology, and we may even hope that he will take the place in Philadelphia so long ago vacated by Cassin.

It will be with unusual interest and great pleasure that the young ornithologists will pay their first visit to the Academy. The visit of the older ones, whose memories extend backward to the times when the Academy was located on Broad Street and when Cassin and Wilson lived, will be tinged with melancholy as well as with pleasant recollections.

Letters.

(DEFERRED FOR WANT OF ROOM.)

Notes.

HUMMING BIRD ON NEST.—A good photograph of a Humming Bird on her nest was secured by



HUMMING BIRD ON NEST.

Mr. F. H. Fowler of Fort Logan, Colorado, and is reproduced in the accompanying illustration.

THE KEEL OF STERNUM OF HARRIS' CORMORANT has been found by Mr. F. A. Lucas to be obsolete, only the anterior point being developed for the attachment of the furcula. The species is most nearly related to Brandt's Cormorant, *Phalacrocorax penicillatus*, being even more directly allied than is Pallas' Cormorant, *Phalacrocorax perspicillatus* to the Red-faced Cormorant, *Phalacrocorax urile*. The wings are very small, but as they have degenerated, the legs have developed so that they are even more robust than in Pallas' Cormorant although this bird was much larger.

THE ZOOLOGICAL PARK OF NEW YORK was opened to the public on the 8th of November.

PRACTICAL INSTRUCTION IN ZOOLOGY may be enjoyed hereafter by students of the public schools of Philadelphia. Teachers will be encouraged to go with their classes to the Zoological gardens and Fairmount Park and their visits will be credited as part of their regular class duties.

NEW ABYSSINIAN BIRDS.—Mr. Weld Blundell and Lord Lovatt made a fine collection of birds during a recent journey through southern Abyssinia and the Galla country, a large portion of which had not been explored previously. The most noteworthy feature of the ornithological collection was the large number of species in proportion to the skins obtained; 530 specimens were secured, and those represented as many as 234 species, 18 of which were new or not previously in the British Museum. The collection was given to the Museum by the collectors and is now in the hands of Dr. Bowdler Sharpe and Mr. Ogilvie-Grant for report. "An idea of the prolificness of the country in bird life may be gathered when it is stated that on entering a new valley the two travellers, having already

obtained over 200 species, secured a starling, two small finches, a kingfisher, a reed warbler, a swallow and a weaver, all new to their collection and six of the birds not ever seen before".

A CIRCULAR BESPEAKING BIRD PROTECTION and co-operation with the Audubon Society has been issued "to the school officers and teachers of the State of Rhode Island" by the commissioner of education of that state.

THE PRIMARY FEATHERS OF TURKEY BUZZARDS are being utilized now by the dealers in feathers in the place of Eagle feathers!

THE LAST RECORDED SALE OF A GREAT AUK'S EGG was made at Stevens' auction rooms in London. Although the egg was slightly cracked, it commanded the price of 300 guineas—about 1,500 dollars.

PROFESSOR DEAN C. WORCESTER, one of the Philippine commissioners and well known for his publications on the birds of the Philippine archipelago, has returned to the United States and is now in the City of Washington.

NEST AND EGGS OF CALIFORNIA VALLEY QUAIL.—The accompanying illustration repre-



NEST AND EGGS OF CALIFORNIA QUAIL.

sents a nest with 18 eggs found and photographed by Mr. T. D. Hurd of Riverside, Cal.

BIRDS IN SCULPTURE.—It is Emperor William's desire that henceforth the sculptors who do his bidding shall forget what they know of zoology and mythology as well. "A fine example of the zoological art condemned by the Emperor," says the "Berlin Borsenzeitung", "is the national monument of Kaiser Wilhelm I at the Schloss-freiheit. Besides the old Kaiser and his horse, the only figures really necessary, there are upon this monument nineteen half-naked women, twenty-two half-naked men, and twelve half-

naked children. Then there are twenty-one horses, two oxen, eight sheep, four lions, sixteen bats, six mice, one squirrel, ten doves, two cows, two eagles, sixteen owls, one kingfisher, thirty-two lizards, eighteen snakes, one carp, one frog, sixteen crabs—in all 157. This number does not include the figures upon the mosaic foundation, which represents eagles and genii too numerous to mention. Fifty-three naked figures and 157 animals comprise the subjects required by the Berlin School of Art to awaken our memories of old Wilhelm I. If a person can't express himself in a clear and short sentence he starts to make faces. When an artist cannot produce a clear, simple picture of a man he takes refuge among eagles and naked girls".—Berlin Letter in the CHICAGO RECORD

OUR FALL BIRD VISITORS.—When autumn comes, a host of little winged travellers who have been summering in northern New England or over the Canadian border return to their spring haunts in the middle States, tarrying until the increasing cold prompts them to continue their journey southward. From early in September until late in October, the changing foliage of fall entertains the same restless transients which fluttered about in the budding leaves of spring, and the bird lover hastens out each morning to see whether any fresh arrivals have come since yesterday. Perhaps the most beautiful and also the least well known of all bird migrants are the tiny members of the warbler family, exquisite, restless, brilliantly colored little creatures which, when one has learned to see them, display themselves in almost endless numbers and variety, while to the uninitiated they are well nigh invisible and inaudible.

There are several reasons why the warblers are less generally known than our other common birds. In the first place, save for the humming birds and the kinglets, they are the tiniest of bird kind, and then most of the beauties insist upon flitting about in the very tops of the trees, or hiding themselves amid the dark foliage of hemlock or spruce. Moreover, while many warblers may be found in almost any bit of woodland or hedge of tree growth, some of the most attractive varieties seek the seclusion of wet lowlands and tangled thickets. These peculiarities of the family may explain why many a lover of our woods misses one of the most delightful manifestations of nature. The plumage of these birds is often tropical in brilliancy, and is always peculiarly beautiful in marking; while they are so delicate and trim of build, so graceful and light of motion as they flutter about a twig or dart after a passing insect, that other birds must surely regard them as the exquisites of all bird kind.

The season for the fall invasion of our middle States is from about the middle of September until the middle of October, though the time varies a little from year to year, according to weather conditions. And though some varieties have remained with us throughout the summer, they have hidden themselves so effectively during the breeding season as to seem newcomers when they appear again in field and woodland.

Indeed, the only warbler whose nest one may hope to find in the course of an ordinary summer's strole is that of the yellow warbler, or summer yellowbird. This little pater familias builds his home in any bush hedge by roadside or by stream, and his mate scolds you soundly if you startle her from her nest.

Of the seventy varieties of warblers which visit the United States one may reasonably hope to become acquainted with from six to a dozen during one season's watching.

Several of the warblers lose much of their bright color during the summer, and are better identified in the spring. Among those are the myrtle and the magnolia, the yellow of whose coats is sadly faded when they return in the autumn. It is better to look for the kinds which may be certainly identified. Of these, the Maryland yellowthroat and the hooded warbler must be the elves or spirits of birdkind. The Maryland yellowthroat wears a black mask which covers his forehead, his cheeks, and the sides of his head, giving him a decidedly impish expression as though, when he peeps out of the foliage, he means to startle you. His throat and breast are yellow, and the upper parts are olive green. His call, like his expression, causes a start of surprise. It is rapid and emphatic for such a tiny speaker.

The hooded warbler follows the poet's advice, and is always dressed as though going to a ball—a masquerade ball. He wares a black hood pulled down over his head and tied under his chin; but his forehead, his cheeks, and his breast are bright yellow, and his upper coat is a fine olive green. Unlike most of his cousins he boasts a somewhat pleasing song—very few of the warblers can really sing; some wag must have named the family. Both of these birds remain with us all summer, breeding in wet, secluded places.

The Blackburnian is the most generally admired of all the warblers, because of the rich, glowing tints he wears. Like the Baltimore Oriole, he dresses in black and flaming orange. He went North to rear his young, but family cares have scarcely dimmed the beauty of his plumage. The top of his head is of velvety black, but through the centre of his crown runs a line of orange, and the same gorgeous tint flames on his throat, his breast, and the sides of his head. His upper coat is black streaked with white, and there are white patches on either wing. In looking up into the trees you may see only the flame-colored throat, at first, and then the paler under parts. Nevertheless you will know your bird, and will watch for a fuller view of the tiny dandy.

More quiet in attire, but trim and dainty, is the black-throated blue warbler. And in the fall he seems to be especially sociable, chasing the unlucky butterfly almost to your feet, and when he has caught it darting up to the branch just over your head. There he sits and looks at you with as much curiosity, if not as much admiration, as your own eyes express. His back and wings are dark slate—almost black—and a pure white spot shines on each wing. His throat and sides are of rich black, against which lies the soft whiteness of his under parts.

The Blackthroated green warbler, if not quite as exquisitely trim as his cousin, is, nevertheless, a very pretty fellow. His black upper vest extends further down over his breast, and his upper coat is green. A bright yellow line over each eye leads a sprightly expression of countenance, and he is fairly abundant and sociable. He also lingers into October, and both of these blackthroated little birds have probably been summering across the Canadian border, though they may have stopped a little way on this side.

The delicate beauty of the chestnut sided warbler is quite as pleasing to the eyes as the more gorgeous coat of the Blackburnian. He may be seen throughout September, and is easily recognized by his bright yellow crown and the fine chestnut coloring of his sides, which contrasts delightfully with his pure white breast. His upper coat is streaked in black and olive green.

These are only a few varieties of one of the bird families which are now making ready to wing their way southward. Flocks of robins feed in the freshly mown fields, and the delicious hue of the blue bird flashes again between earth and sky. The kinglets, the fox sparrow and the white-throated sparrow, and many other bird travelers pay us a fall visit on their way south.—THE SUN, N. Y.

PORTRAITS OF TWENTY-FIVE FOUNDERS OF THE AMERICAN ORNITHOLOGISTS' UNION (1883) have been artistically grouped in a plate published as the frontispiece of Bird Lore for October.

A MONUMENT TO JOHANNES MULLER, the great German Anatomist, who revolutionized the classification of the passerine birds by his

recognition of the taxonomic value of the singing muscles of the oscine or singing birds, was unveiled at Coblenz on the 27th of October.

THE DEATH OF JOHN CORDEAUX of Lincolnshire, England, took place on the 6th of August. He was a voluminous writer on English birds and took special interest in the investigation of the migration of birds. He was born in 1831.

THE DEATH OF DR. KARL BERNHARD BRÜHL, on the 14th of August has been recorded. Dr. Brühl was 80 years of age. He was formerly Professor of Zootomy in the University of Vienna.

THE DEATH OF DR. KARL RUSS, a German Ornithologist, occurred in Berlin, in the 67th year of his age, on the 29th of September.

THE DEATH OF DR. EDWARD ORTON will be regretted by many who had the pleasure of seeing him in August at the meeting of the American Association for the advancement of science of which he was president. Though apparently in normal health then, he did not live more than two months after the meeting, having died October 16th.

THE DEATH OF GRANT ALLEN occurred on the 25th of October. Mr. Allen was known to most people as a popular writer and novelist, but he started out in life with a strong scientific bias and wrote many articles and several books on biological subjects (including ornithology) and especially from an evolutionary standpoint. He was born in Kingston, Canada, in 1848.

Literature.

A HAND-LIST OF THE GENERA AND SPECIES OF BIRDS. [Nomenclator Avium tum fossilium tum viventium.] By R. Bowdler Sharpe, L. L. D., Assistant Keeper, Department of Zoology, British Museum. Volume I, London: Printed by order of the trustees, etc., etc., 1899. [8vo. pp. i-xxi, 1-303].

The first volume of the new "Hand-list of Birds" (see OSPREY, iii, 112) has made its appearance, having been published about September 1. It is based on the twenty-seven volumes of the British Museum Catalogue of Birds, including those species described since the publication of the successive volumes of that series to which are added all fossil species known to the author. The classification employed is in the main that proposed by Dr. Sharpe in 1891 (Review of Recent Attempts to Classify Birds), with some changes of order and family names, interpolation of fossil orders, families, etc., suppression of numerous suborders, and transposition of some families within orders.

The new work is made up much on the order of the old Gray's Hand-list, with the addition of fossil forms, which, with extinct species, are indicated by antique type. The species and genera are not numbered consecutively throughout, as in Gray's work, and no subspecies or subgenera are recognized; indeed, there is little room for

subgenera in this work, for Dr. Sharpe is a generic "splitter" of the first magnitude.

Gray's work, including an index to the genera and species, occupies three volumes, and was completed in as many years. The new Hand-list, which is destined to be of daily use to ornithologists for years to come, will probably require five volumes for its completion, and it is to be hoped no time will be lost in bringing it to a speedy termination.

It is too early to make an estimate on the total increase in species since Gray's time, and a comparison of this sort is, for several reasons, practically impossible. A glance at some of the larger families, however, shows the following: of the diurnal birds of prey (exclusive of fossil forms) Dr. Sharpe recognizes 515 species (of 81 genera), while Gray's list contains only 379 species (of 46 genera, and 67 subgenera); of Owls, Gray lists 206 species (11 genera, and 43 subgenera), Sharpe, 316 species (30 genera); of Herons Sharpe has 108 species (35 genera, Gray, 82 species (5 genera, 22 subgenera); of the Duck tribe, we find 192 species (36 genera, 37 subgenera) in Gray, and 207 species (71 genera) in Sharpe.

The first volume of Dr. Sharpe's work, from the *Archaeopteryx* through the Owls, contains 3 subclasses, 32 orders (of which 6 are fossil), 28

suborders, 83 families (of which 12 are fossil), 63 subfamilies (of which 3 are fossil), 851 genera (of which 110 are fossil, 7 are extinct, and 1, *Tapinops*, is duplicated), and 3,717 species (of which 367 are fossil; 42 are fossil, but without specific names; 13 are extinct—several others probably belong in this category; 8 are recent, but without specific names; 2 are duplicated, and one is nominal).

In the preparation of this work Dr. Sharpe has the co-operation of many active ornithologists, to whom proof sheets (dated, unfortunately) are sent for correction.

In spite of this effort to secure accuracy and to avoid omissions, and as an evidence of human fallibility, we notice the entire absence of the suborder Palamedeæ, family *Anhimide*, with its two genera and three species! Other cases of omission are *Gallinula dionysiana* A. Newton. (Dict. Birds, pt. 3, 1894, 590, footnote), *Dryolimnas abbotti* (Ridgw.) (Auk, xi, Jan. 1894, 74), and *Pandion ridgwayi* Maynard (Amer. Exch. and Mart, iii, no. 6, Feb. 5, 1887, 69). Some lapses which occur are probably due to changes made in the proof; thus we find *Nyctanassa* credited to Reichenbach; *Scops idahoensis* on p. 288 is separated from *Psiloscops flammeola* (from which it is only subspecifically distinct) by 23 species and one genus; Pallas's Cormorant occurs as *Phalacrocorax perspicillatus* on p. 232, and as *Pallasicorbo perspicillatus* on p. 235; *Tapinopus ellioti* occurs in two places, pp. 112, 204; and the family name Pandionidæ has been omitted on pp. xxi, and 279.

Several species of the A. O. U. Check-list are not recognized, (e. g.; *Larus barrovianus*, *Charadrius dominicus fulvus*, *Macrorhamphus scolopaceus*, and *Ereunetes occidentalis*); *Ochthodromus rufinuchus* of the West Indies is also omitted. On the other hand *Colinus castaneus* (Gould) is given a place, as is also *Peristera pretiosa* Ferrari-Perez; although the former is merely an abnormal plumaged variant of *C. virginianus* (one was killed in Virginia a few years ago), and the latter is simply a new name for *Peristera cinerea* (*Columba cinerea*, preoccupied). These supposed species have no more right to a place in the list than *Tetrao medius* (p. 19), which is noted as a hybrid between *T. urogallus* and *Lyrurus tetrix*. The Wood Duck is called *Lampronessa sponsa* (p. 209), but incorrectly so, as *Aix* Boie, 1828, contained three species, *galericulata*, *falcaria* and *sponsa*, no type being indicated. In February, 1832, Swainson used *Dendronessa*, specifying *galericulata* as the type. About the same time Wagler used *Lampronessa* for *sponsa* and *galericulata*, but this name cannot be used in any event, as both *Aix* and *Dendronessa* are available. If the two species are generically distinct they should stand as *Aix sponsa* and *Dendronessa galericulata*.

Several unfamiliar names for North American species are introduced, such as *Zenaida meridionalis* for *Z. zenaida*, and *Surnia [ulula] dolia* for the Hawk Owl straggling to Alaska.

The Jamaica Petrel is called *Æstrelata jamaicensis* (Bancroft), but Bancroft did not

describe the bird and his name is purely a *nomen nudum*. The proper name is *Æ. caribbæa* (Carte).

The Boat-bills are included with the Herons, between *Nycticorax* and *Gorsachius*, although they are recognized by many as constituting a perfectly distinct family.

The new names professing to date from this work are: *Mezotreron*, p. 56; *Alopecænas* (ex Finsch MS.) p. 90; *Pseuduria*, p. 131; (see Coues, Osprey, iii, no. 9, May [publ. June 10], 1899, p. 144); *Ameghinia* (vice *Pseudolarus*, vox hybrida!), p. 184; *Anas benedeni* (*Anas Creccoides* Van Ben. nec King), p. 217; *Pallasicorbo* (ex "Coues MSS. 1898"), p. 235, (see Coues, Osprey, iii, no. 9, May [June 10], 1899, p. 144); and *Psiloscoops* (ex "Coues, MSS. 1898"), p. 289 (see Coues, Osprey, iii, no. 9, May [June 10], 1899, 144).

Several generic changes made by Mr. Oberholser, (Proc. Acad. Nat. Sci. Phil., June 2, 1899, pp. 201-216), but published too late for use in this volume are the following: *Micruria* Grant (p. 201), should be *Endomychura* Oberh.; *Euhyas* Sharpe, p. 151, should be *Zapterus* Oberh.; *Defilippia* Salvad., p. 148, should be *Hemiparra* Salvad.; *Phyllopezus* Sharpe, p. 168, should be *Actophilus* Oberh.; *Orthocnemus* Milne-Edw., p. 112 should be *Idiornis* Oberh.; *Tapinopus* Milne-Edw., p. 112, should be *Diatropornis* Oberh.; *Peristera* Swains., p. 82, should be *Claravis* Oberh.; and *Harpa* Bp., p. 273, becomes *Nesiera* Oberh.

All working ornithologists will hail with joy the appearance of the remaining volumes of the new Hand-list, which cannot fail to become one of the most important works of reference of the day.—C. W. R.

DICKEY DOWNEY. THE AUTOBIOGRAPHY OF A BIRD. By Virginia Sharpe Patterson. With introduction by Hon. John F. Lacey, M. C. Drawings by Elizabeth M. Hallowell.—Philadelphia: A. J. Rowland. 1899 [160, 192, p. 4 col. pl.] The object of the author of this little book is indicated in the introduction. "Birds of beautiful plumage are now threatened with extinction by the desire of womankind for personal decoration. Audubon Societies are organizing a crusade, and Mrs. Patterson's principal purpose in this book is to direct attention to the wholesale slaughter of the birds of plumage and song". Under the guise of an autobiography, a nameless bird is supposed to give its experience, and that of other birds with which it comes into association. The demands of "the pretty ladies, the wicked ladies" are exposed. The four plates are portraits of different birds printed in colors, but have been taken from poorly mounted specimens, and the colors are not true to nature. One of the plates also represents another species than that with which it is identified, the name subscribed being "the Summer Tanager" whereas it is the Scarlet Tanager. Doubtless the work may interest some of the children for whom it was written.

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NOTES FROM NORTHERN COUNTIES OF CALIFORNIA.

By MILTON S. RAY.

May 18, 1899, found us making our way through the fertile country of Marin towards Mendocino County. Some miles south of Novato on the bottom lands, where we pulled up for the night, numerous nests of the American

A few miles north of Healdsburg, Sonoma County, we left the valley and started for the coast. At Skagg's Hot Springs, a short distance in the foot hills, I was surprised to find Western Robins abundant. While crossing the



THE GUALALA RIVER. FISHING PLACE FOR KINGFISHERS.

Crow were found, all in laurel trees about 40 feet from the ground. The nests examined contained but one or two nearly full grown young. One nest made of sticks, twigs, moss, paper, etc., and lined with bark and finer material was 5 inches deep and 13 inches across.

Coast Range some days later we came across one of California's most beautiful birds, the Louisiana Tanager. A male was found lying near the road and had evidently been shot. A short trip up the coast brought us to the mouth of the Gualala River in Mendocino County.

Our camp two miles inland at the forks of the river in the shade of a giant redwood was an ideal one. The surrounding country was once thickly wooded but the best timber had been cut down leaving the smaller trees, thick brush, and here and there a great redwood or tall pine standing.

Considering the abundance of trout in these coast streams, the numberless Belted Kingfishers are accounted for. On May 25, along the North Fork I found a nest of this bird containing six young and one addled egg. On June 1, they

with amazing quickness after the same prey. One of the latter was stunned with a fishing pole but feigning death it got away.

On June 3, we started up the coast where the avifauna possessed much of a sameness. Nuttall's Sparrow was the typical and sometimes the only bird to be seen. An occasional Western Meadowlark or House Finch did his best to counteract the saddening effect of the sparrow's song. A large flock of Band-tailed Pigeons numbering over seventy individuals was seen on a grassy tract along the cliffs.



YOUNG KINGFISHERS ON A LOG.

were placed on a log and photographed, and what a racket the old Kingfisher made when she returned with her usual fish to find her offspring trying to look pleasant! Flying back and forth, she uttered her clattering cry continuously.

The nesting season was about over here: Chickadees were already peeping from niches in the laurel trees; Song Sparrows evinced great anxiety when a nest was approached and the young, generally full fledged, scrambled into the bush. Prettily spotted young Western Robins were common, and Blue-fronted Jays, whose family cares long over, were now and then seen feeding young as large as themselves. Towards evening the song of the Russet-backed Thrush came from the solitudes with an occasional chipping in of a Western Robin or Black-headed Grosbeak. Multitudes of swifts and bats, silent and almost indistinguishable, darted

Two days of steady travel brought us to Mountain View, in the heart of the Coast Range Mountains, where I had the good fortune to take a set of four eggs of the Louisiana Tanager. Placed near the end of a thick pine branch about fifteen feet from the ground the nest was well concealed and hard to reach. When preparations for climbing the tree were made, the female slipped off the nest and was lost in the thick foliage but soon returned with her mate. The nest, a flat structure, is composed of rootlets and moss and lined with horse hair.

We reached Blue Lakes (Lake Co.) on June 7. These lakes, three in number, are each about three quarters of a mile long and four hundred yards wide. The surrounding country is mountainous, dry and parched, and covered with a scrubby brush called chemise. The area about the lakes, however, presents a striking contrast, being thickly wooded with willow, laurel, buck-

eye, oak and pine trees. In the high tules fringing Laurel Dell Lake I found several nests of the Western Yellow-throat, one containing four partly incubated eggs and near by a Samuel's Song Sparrow's nest with the same complement. Six eggs of Allen's Humming-bird were found on the lake shore within a radius of sixty feet, in laurel and buckeye trees. Besides the usual species a number of Green Herons, Mockingbirds and Cormorants were seen.

On our way home I discovered a nest of the Am. Dipper on a ledge of a cliff on Sulphur

but seeing us she left her perch and, after hovering over our heads, sailed out of sight. Leaving my brother to "snap" the kite should she return, I ascended the tree. The lower limbs were fairly strong and it was an easy matter to climb up fifty feet. Higher up, however, a large limb snapped suddenly and the others became so small and dead that it was dangerous to ascend further, and, although it was tantalizing to leave such an inviting nest but forty feet higher up, I descended. Happening to camp nearby, visions of richly marked eggs again brought us to the spot at dusk. The parent



NEST OF WHITE-TAILED KITE ON TERMINAL BOUGH OF TALL DEAD PINE.

Creek near the Geysers (Sonoma Co.). It was necessary to swim against the current to reach the nest which contained four half grown young. Near Geyserville, a nest in a tall dead pine on the hillside attracted our attention. The day being very warm, we left Pierce of our party to drive the team in the shade, while my brother and I, armed with a shot-gun and kodak, set forth up the canyon. Making our way through the dense manzanita and other brush, we finally reached a knoll opposite the tree. A White-tailed Kite was on a limb below the nest,

sailed off the nest on our approach, but stayed in the vicinity. Being deceived from a distance by the height of the tree, Pierce volunteered to bring the treasures into camp. A short climb on the dead limbs, however, cooled his ardor and he also gave it up.

Leaving next morning, we travelled all that day, and the Kite's nest, clearly outlined against the blue sky, was left far to the north. Arriving in San Francisco on June 19, our 360 mile trip to Lake and Mendocino Counties came to an end.

THE LARGEST BIRD THAT FLIES.

BY J. E. HARTING.

If the subject of inquiry were the largest bird that ever lived, there can be little doubt that the palm would have to be awarded to the extinct New Zealand Moa (*Dinornis maximus*), of which the total height was about 10ft., the tibia or thigh bone measuring a yard in length. But this bird, like all the members of its genus, and like the Apteryx, Emu, Cassowary, Rhea, and Ostrich, which survive at the present day, was incapable of flight, and, therefore, for the present purpose need not be compared with those presently to be noted. As, however, there is some conflict of opinion as to the probable height of the largest species of Moa, and a variation in the statements as to length of tibia in *Dinornis maximus*, it may be of interest *en passant* to refer to it. According to Messrs. Nicholson and Lydekker (*Manual of Palæontology*, 3rd ed., 1889), the height (as above stated) was 10ft., and the length of tibia 3ft. In Professor Newton's admirable "Dictionary of Birds" (art. "Moa") it is stated that *Dinornis maximus* is the largest of all the species, having a tibia measuring 39in., and probably reaching a height of 12ft. The former statement having been published in 1886, and the latter in 1894, suggests as a possible explanation that between those dates a longer tibia (3in. longer) came to hand, from which the increase in height of 2ft. was inferred; but the proportions in inches would be—36: 39:: 120: 130, that is to say, the specimen with a tibia of 3ft. 3in. would measure only 10ft. 10in. in height, instead of 12ft., as mentioned in the Dictionary quoted.

But this by the way. The problem I will now try to solve (and it is one of some little interest) is, "Which is the largest existing bird that flies"? The question is by no means easily answered offhand. Ninety-nine persons out of a hundred who are not naturalists would probably infer, from the marvellous stories they have read of lambs, kids, and even children being carried off by it, that the Lammergeier, or Bearded Vulture (*Gypætus barbatus*) must be unquestionably the largest living bird that flies. Those who have travelled in Peru and Chili would doubtless maintain that the South American Condor (*Sarcorhamphus gryphus*) must surely exceed it in size; while passengers who have made a voyage to the Cape or to the Falkland Islands will feel convinced that no bird at the present day has a greater expanse of wing than the Wandering Albatross (*Diomedea exulans*). It is not possible to settle these rival claims without having recourse to actual measurement. "Estimated" expanse of wing is for our purpose useless; hearsay evidence must be discarded. What we want are facts, first hand, from those who have actually taken measurements and ascertained weights, or seen them taken by others in their presence.

If length of body from tip of beak to end of tail, expanse of wing measured between the extended tips, and weight of dead bird are to be taken as a test of size, it will probably surprise many persons to learn that the Lammergeier is not the largest bird of prey in Europe, and that quite as large and somewhat heavier a rival has

visited the British Islands within the memory of those now living. I refer to the great Griffon Vulture (*Gyps fulvus*), a specimen of which, as related in Yarrell's "British Birds", was captured in 1843 near Cork Harbour.

This huge bird, when adult, measures from tip of beak to end of tail from 3ft. 10in. to 4ft. 1in. according to sex (the females, as with most birds of prey, being larger than the males); the expanse of wing is from 8ft. 10in. to 9ft. 2in., and the weight from 18lb. to 20lb.

Not much inferior in point of size, though somewhat less in weight, is the Cinereous Vulture (*Vultur monachus*), the male of which attains a length of 3ft. 6in. and the female 3ft. 9in., with an expanse of wing varying from 8ft. to 9ft. 10in., according to age and sex, and an average weight of about 14lb., the female bird being a pound or two heavier.

An inquisitive reader may here inquire how do these weights compare with those of the eagles which dwell in Scotland and the Isles, as well as in Ireland, and are met with from time to time in England, on migration, generally in autumn.

An immature Golden Eagle from Loch Gair, obtained in the month of August, weighed 9½lb., and measured between the extended wings 6ft. 7in. Another two-year-old bird, procured in Ross-shire in September, 1897, weighed 11lb.; a third, killed at Kylemore Castle, Galway, in October, 1889, weighed 12½lb. An immature White-tailed or Sea Eagle, shot in Brighton, weighed 10lb.; another, killed at Arundel, barely 10lb.; while a fine old bird in fully adult plumage, from Stornoway, Lewis, weighed not less than 16½lb. This is the heaviest White-tailed Eagle of which I have any note. It has been referred to by Robert Gray ("Birds of the West of Scotland", p. 17) as being in the collection of Sir James Matheson, Bart., of Stornoway, and the finest British example of the Sea Eagle he had ever seen. He adds, "compared with three or four other Sea Eagles in the same collection, its size, indeed, appears quite extraordinary, and had the specimen been darker in colour it might have readily been mistaken for the Northern Sea Eagle of Pallas".

It might be supposed that the Imperial Eagle would be larger and heavier than the Golden Eagle, but from actual comparison this does not appear to be so. Thus the Golden Eagle measures 3ft. to 3ft. 4in. in length, 6ft. 6in. to 7ft. 6in. in expanse of wing, and weighs from 9lb. to 12lb., while the Imperial Eagle measures only 2ft. 6in. to 3ft. in length, 6ft. 4in. to 7ft. 1in. in expanse of wing, and weighs on an average from 6lb. to 8½lb.

As for the Lammergeier, it will be found on comparison of measurements and weights, that while in expanse of wing it measures no more than an adult Griffon Vulture (8ft. 3in. to 9ft. 2in.), its weight may be several pounds less.

Capt. Hutton, writing of the Lammergeier as observed by him in the Himalayas, remarks:

"Marvellous indeed are the stories told both by natives and Europeans of the destructive

habits of this bird, and both accounts I fully believe have scarcely a grain of truth in them. All I can positively say upon the point, however, is that I have known the bird well in its native haunts for thirty years and more, and never once in all that time have I seen it stoop to anything but a dead carcase. As to carrying off hens, dogs, lambs, or children, I say the feat would be utterly impossible, for the creature does not possess the strongly curved sharp-pointed claws of the Eagle, but the far straighter and perfectly blunt talons of the Vulture*.

Mr. R. Thompson also, after close and constant observation of the habits of the Lammergeier for twelve years, writes:

"I have never seen them attack or come down to a living animal. They have repeatedly sailed past close to my nets when I have had live fowls and pigeons picketed as lures for hawks and eagles. They have passed within a few feet of these without once showing a desire to pick up any of the birds; and this, too, on the tops of high mountains in a perfectly wild country, with no human inhabitants within miles. On the other hand, they will at once come down on a well cleaned carcas, a heap of bones, or the skeletons of smaller mammalia*. There must, of course, be some foundation (he adds) for the many statements that have been put forth as to the rapacious character of this bird. But this foundation I believe to consist in the natives constantly attributing the depredations committed by Eagles to the Lammergeier".

As to the weight which the larger Eagles can carry in the shape of prey, the writer last quoted says the Golden Eagle will kill and carry off young deer (*i. e.*, fawns) and kids, as I have myself seen. One, at Strathmore, in Caithness, while devouring the carcase of a mountain hare, was attacked by a fox; a fight ensued, and after a severe struggle, in which the fox got badly torn by the Eagle's talons, and the bird got severely bitten in the breast; the Eagle, to save itself, took flight, with the fox holding on, until, at a considerable height in the air, the latter dropped to the ground and was killed by the fall. Mr. Robert Gray took pains to verify this story.

Mr. A. O. Hume, writing of Pallas's Sea Eagle, says:

"A Grey Goose will weigh on the average 7lb. (much heavier are recorded), but I have repeatedly seen good sized Grey Geese carried off in the claws of one of these Eagles, the birds flying slowly and low over the surface of the water, but still quite steadily".

He once saw an Eagle of this species on the river Jumna capture a fish so large that the bird only with difficulty succeeded in reaching a low sandbank in the river with its prey. As it made for this bank it flew so low, and with such difficulty that the writhing fish in its claws struck the water every few yards, and twice seemed

likely to pull its persecutor under water. On reaching the sandbank some 250 yards distant from the observer, a shot from his rifle caused it to quit the fish, which was then recovered and found to be a carp (*Cyprinus robita*), weighing over 13lb., that is, considerably heavier than its captor. For the reason above given, such a feat would be impossible for the Lammergeier.

Come we now to the Condor of South America, a bird which is known to have a wide geographical range. It is found on the west coast, from the Strait of Magellan along the Cordillera as far as eight degrees north of the equator. The steep cliff near the mouth of the Rio Negro is its northern limit on the Patagonia coast, and they have there wandered about 400 miles from the great central line of their habitation in the Andes. Further south, among the bold precipices at the head of Port Desire, the Condor is not uncommon; yet only a few stragglers occasionally visit the sea coast. A line of cliff near the mouth of the Santa Cruz, Patagonia, is frequented by these birds, and about eighty miles up the river, where the sides of the valley are formed by steep basaltic precipices, the Condor reappears. From these facts, says Darwin, from whom I quote ("Naturalist's Voyage Round the World", p. 182) it seems that the Condors require perpendicular cliffs. In Chile they haunt during the greater part of the year the lower country near the shores of the Pacific, and at night several roost together in one tree; but in the early part of summer they retire to the most inaccessible parts of the inner Cordillera, there to breed in peace. As regards the expanse of wing in the Condor, there appears to be some conflict of testimony, although it may well be that the discrepancy in the measurements which have been recorded is due to the fact that they were taken from birds of different ages and sexes. Thus, in the journal above quoted, under date April 27, 1834, at Santa Cruz, Patagonia, Darwin writes: "This day I shot a Condor. It measured from tip to tip of the wings 8½ft., and from beak to tail 4ft." From measurements supplied by others it would appear that this was quite a small one. In Ecuador, for example, the largest seen by Mr. Edward Whymper measured 10ft. 6in. from tip to tip of extended wings, although he remarked that most of those seen at Antisana and elsewhere were not so much as 9ft. ("Travels in the Andes"). The experience of Capt. George Byam, the author of "Wanderings in some of the Western Republics of America", is instructive on the subject of Condors. He saw many which measured 12ft. in expanse of wing, and one of 13ft., while the largest out of several which he shot in Chili measured exactly 15ft. from tip to tip when pulled out fairly and not too hard. "It was (he says) a very powerful heavy bird, with legs almost as thick as my wrist, and the middle claw or finger, which I kept, was 7in. in length". Mr. N. E. Bieber, writing in the *Field* of February 11, 1899, on "Deer Shooting in Bolivia", remarks incidentally that a good sized male Condor will

*This does not quite accord with remarks of Mr. Abel Chapman, who, in his delightful book, "Wild Spain," p. 314, quotes Manuel de la Torre, the best field naturalist in Spain, to the effect that the Lammergeier takes young lambs and kids, and that he shot one in the act of eating a rabbit which he had just seen it kill.

measure 15ft. across the wings, thus confirming the observation long previously made by Capt. Byam, a good sportsman and accurate writer.

Dr. Robert Cunningham, in his entertaining volume "The Natural History of the Strait of Magellan" (1871), describing an exploration of the Patagonia coast between Cape Possession and Dungeness Spit, recounts his falling in with seven or eight Condors, one of which he tried in vain to stalk.

It is (he says) a truly magnificent bird when seen in a wild condition and on the wing; and one cannot be surprised that the most exaggerated accounts were given by the older travellers of the dimensions to which it attains, as much as 18ft. having been sometimes assigned to the expanse of wing.

This, of course, is mere guesswork, and not an ascertained measurement. Some idea of the size of bird may be gained from an inspection of its furcula, of which he gives a figure (p. 303) from a specimen picked up on the beach.

If weight alone were a criterion of size, the Steamer Duck of the Falkland Islands (*Micropterus cinereus*—*Anas brachyptera* of Latham) would challenge comparison with some of the birds above-named. The largest obtained by Dr. Cunningham, who gives an excellent account of it (op. cit. p. 93), measured 3ft. 4in. from bill to tail and weighed 13lb., while Capt. Cook mentions in his voyage that the weight of one was 29lb. Capt. Philip King, who observed this "gigantic oceanic duck" at the Falklands, described it as the largest he had ever seen (*Voy. "Adventure"*, i. p. 36), and remarked upon the small size of the wings, which, "not having sufficient power to raise the body, serve only to propel it along rather than through the water, and are used like the paddles of a steam vessel. Aided by these and its strong, broad-webbed feet, it moves with astonishing rapidity. It would not be an exaggeration to state its speed at from twelve to fifteen miles an hour. This bird, however, being incapable of flight, at all events when fully adult (see Newton's "Dictionary of Birds," p. 518), is not comparable with those large pinioned species above mentioned. As for the Wild Swan, which might seem to challenge comparison with them, it may be remarked *en passant* than an adult Whooper (*Cygnus ferus*) will measure 4ft. 10in. from tip of bill to end of tail (the long neck counting for much), 7ft. in expanse of wing, and will weigh from 18lb. to 25lb. Here it will be seen that, notwithstanding the enormous weight, the extent of wing is no greater than in the Golden Eagle, much less than in the Griffon Vulture, Cinereous Vulture, and Lammergeier, and only half that of the Condor.

For our present purpose it remains only to ascertain what has been recorded on good authority of the measurements and weight of the largest species of Albatross (*Diomedea exulans*). It is found throughout the Southern Ocean, and is seldom met with further north than lat. 30° S., although stragglers have from time to time been reported as occurring beyond that limit. The literature relating to this bird is very extensive, so much so, indeed, that it

will be necessary to pass over many facts of interest concerning it, in order to confine attention to the only two points which have any bearing on the present inquiry, namely, dimensions and weight.

Here is a good observation of the kind needed by the late Dr. George Bennett, of Sydney. In his "Gatherings of a Naturalist in Australasia" (1860, p. 72), he writes:

On June 8, in lat. 37° 15' S., long. 16° 27' E., we captured the unusual number of seven specimens of the great Wandering Albatross. They were elegant birds of large size, with fine and shining plumage, but were quite helpless and stupid when brought on board. The size of the largest was as follows: Length from the base of the bill to the extremity of the tail, 3ft. 10in.; size of the expanded wings, 11ft. 8in. In others the extended pinions measured from 10ft. 4in. to 11ft.; indeed, I consider 11ft. the general measurement. I have met with only one specimen in which the spread of wings measured 14ft. The difference of sexes did not, in any of these specimens, make any alteration in size; and although the plumage differed through age, it did not afford any sexual distinction.

Mr. W. A. Sanford, writing of Albatrosses seen during a voyage to Australia, and particularly referring to those skinned and dissected by himself (*Zoologist*, 1889, p. 387), remarks:

I have never measured an Albatross which was more than 11ft. in expanse of wing—I think the exact measurement was 10ft. 10in.—but I have been confidently assured by others that they have measured some as much as 14ft."

This confirms the above-mentioned statement by Dr. Bennett.

Herr Reischek, who visited and described a remarkable breeding haunt of the Wandering Albatross in the Auckland Islands (*Trans. N. Z. Inst.*, 1889, p. 126, and *Zoologist*, 1889, p. 337), gives the following dimensions of some that he measured: Total length from tip of bill to end of tail, 3ft. 3in.; bill 7in.; tail, 7½in.; whole wing, from 4ft. 10in. to 5ft. 10in.; primaries, 1ft. 8in.; whole leg, 1ft. 10in.; tarsus, 4½ in.; middle toe, 7in. By the expression "whole wing" is evidently intended the length from the body (not from the carpal joint) to the end of the longest primary, just as the expression "whole leg" includes more than the tarsus.

Out of more than a hundred specimens of the large Albatross (*D. exulans*) caught and measured by Mr. J. F. Green (see his "Ocean Birds", p. 5), the largest was 11ft. 4in. from tip to tip. This, he says, was confirmed by the experience of a ship's captain, who in forty years had never found one over that length. As this bears out the observations of Dr. Bennett and Mr. W. A. Sanford, we may take it that 11ft. represents the normal expanse of wing in a fully adult bird.

In regard to weight, Capt. Hutton endorses the statement made by Gould that the average weight of the Wandering Albatross is 17lb.

The following table will enable a ready comparison of the species named:

THE FOLLOWING TABLE WILL ENABLE A READY COMPARISON OF THE SPECIES NAMED.

Name of Species.	Length.	Expanse of Wing.	Weight.
Golden Eagle	3ft. to 3ft. 4in	6ft. 6in. to 7ft. 6in	9lb. to 12lb.
Sea Eagle	2ft. 6in. to 2ft. 10in	7ft. to 8ft	10lb. to 16lb.
Imperial Eagle (India)	2ft. 6in. to 2ft. 8in	6ft. 4in. to 7ft. 1in	6lb. to 8lb.
Imperial Eagle (Spain)	2ft. 6in. to 3ft	6ft. 3in. to 6ft. 10in	8½ lb. to 10¼ lb.
Wedge-tailed Eagle (Australia)	3ft	6ft. 8in. (Gould)	9lb. (Gould).
Griffon Vulture	3ft. 10in. to 4ft. 1in	8ft. 10in. to 9ft. 2in	18lb. to 20lb.
Cinereous Vulture	3ft. 6in. to 3ft. 9in	8ft. to 9ft. 10in	14lb. to 18lb.
Lammergeier	3ft. 8in. to 4ft. 1in	8ft. 3in. to 9ft. 2in	10lb. to 16lb. (Chapman).
Lammergeier	3ft. 8in. to 4ft. 1in	8ft. 6in. to 9ft	—
Condor (Patagonia)	3ft. 6in. (Sharpe)	8ft. 6in. (Darwin)	Not stated.
Condor (Ecuador)	3ft. 6in	10ft. 6in. (Whympner)	Not stated.
Condor (Chile)	Not stated	12ft. "many" (Byam)	Not stated.
Condor (Chile)	Not stated	13ft. "one" (Byam)	Not stated.
Condor (Chile)	Not stated	15ft. "largest" (Byam)	Not stated.
Bustard (Norfolk)	3ft. 9in	6ft. 6in	24lb. (Stevenson).
Bustard (Seville)	—	7ft. 3in	26lb. (Nicholson).
Bustard (Seville)	—	7ft. 1in	28lb. (Nicholson), (30lb. Chapman).
Crane (India)	3ft. 8in. (Tieckell)	6ft. 9in. (Tieckell)	10lb. 8oz. (Zool., 1876).
Crane (England)	4ft. (Yarrell)	6ft. 6in	10lb. 13oz. (Stevenson).
Stork	3ft. 6in. to 3ft. 8in	8ft. to 9ft	Not stated.
Heron	3ft	5ft. to 6ft	5½ lb. (Muirhead).
Wild Swan	5ft. (Selby)	7ft. to 8ft. (Selby)	18lb. to 25lb.
Albatross	3ft. 10in	11ft. to 14ft. (Bennett)	17lb. (Gould).
Albatross	3ft. 10in	10ft. 10in. (Sanford)	—
Albatross	3ft. 10in	11ft. 4in. (Green) to 12ft. (Hutton)	—

From this table it will be seen that, while the heaviest bird capable of flight is the Bustard, its expanse of wing, a trifle less than that of the Wild Swan, is 3ft. or 4ft. less than that of the famous Albatross, and only half that of the largest Condor on record. It is somewhat curious that the Australian Bustard, though said to be larger than our bird, standing higher on its legs, and with longer neck, weighs considerably less. Gould, who "frequently encountered and killed it both on the plains of the Lower Namoi and also in South Australia", gives the weight of the male bird from 13lb. to 16lb. The great Bustard of South Africa, the "gompaauw" of the colonists, according to Mr. E. L. Layard, weighs from 30lb. to 35lb.

DANIEL WEBSTER PRENTISS.

By the Editor.

The Death of Daniel Webster Prentiss is a personal loss to the editors of the *OSPREY* as well as to many other ornithologists. Although not a contributor to the literature of ornithology for a number of years, he retained an interest in it to the last. He was born in Washington, D. C., May 21, 1843, and continued to live there till his death on November 19th. He graduated from Columbian College in 1861, receiving the degree of Ph. B., and immediately afterwards commenced the study of medicine; he completed the course in 1864 when he received the degree of M. D. from the University of Pennsylvania.

While yet a college student, he compiled with his classmate, Elliott Cones, a "List of the Birds of the District of Columbia", which was published in the Annual Report of the Smithsonian Institution for 1861 (p. 398-421); this was the basis of an illustrated work by the same authors published in 1883 as a Bulletin of the United States National Museum (No. 26) and entitled "Avifauna Columbiana". The engrossing demands of an extensive practice prevented further original investigation in ornithology. As a medical author he is known through many articles published in professional journals.

We present here a copy of a photograph taken in 1861 when a student in Columbian College, then an enthusiastic collector and student of birds and engaged with Cones on the List of the birds of the District of Columbia.

There is not much difference in the dimensions of the larger Eagles above-mentioned, all of which are less than those of the largest Vultures. The far-famed Lammergeier does not exceed in size the Griffon Vulture, nor does it weigh so much by several pounds; while in point of size the Giant Albatross of the Southern Ocean, with an average expanse of 11ft. 4in., has to yield to the Condor of Chile, whose extended pinions have in many cases measured 12ft., and in one instance, on good authority, the almost incredible width of 15ft.

From *The Field*, (London), vol. 94, p. 482, September 16, 1899.



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Comments.

THE SEVENTEENTH CONGRESS OF THE AMERICAN ORNITHOLOGISTS' UNION.

If there ever existed any doubt of the expediency of holding the meeting of the American Ornithologists' Union in Philadelphia, that doubt has been once for all most effectually dispelled. For not only was the recent session an unqualified success, but in numbers it far surpassed any previous one, as the total of seventy-four members present, compared with the largest attendance hitherto recorded—that of sixty at Washington in 1898—amply attests. Eminently fitting it seems to be, that in this city of Philadelphia, the city for so long a time universally recognized as foremost in the annals of American ornithology, and now so rich in historic associations, there should assemble in congress the successors of those who made American ornithology famous in the early years of the century now drawing to a close.

Convening on Monday, the 13th of November, the Union, after disposing of the usual routine business, proceeded on the following day to the consideration of scientific papers, assembling for this purpose in the Lecture Hall of the Philadelphia Academy of Natural Sciences. Mr. Witmer Stone, as chairman of the Committee on Bird Protection, in an elaborate report presented very encouraging news of the increased interest

in birds and their preservation, as well as of the gratifying growth of the Audubon Society movement. First upon the regular program came Mr. Frank M. Chapman, who spoke "On the Plumages of Certain Boreal Birds". He was followed by Mr. Witmer Stone, who treated "The Summer Molting Plumage of Eider Ducks", bringing out some very interesting facts in regard to hitherto imperfectly understood changes. This paper was very fully discussed by various members. Dr. J. Dwight, Jr. then presented an exceedingly important paper on "The Sequence of Plumages and Molts in Certain Families of North American Birds", dwelling particularly upon the evidences of so-called color change in feathers without molt. In "The Ranges of *Hylocichla fuscescens* and *Hylocichla f. salicicola*" Mr. Reginald Heber Howe, Jr. stated that the geographic distribution of the latter should be extended to include Newfoundland. "Three Years' Migration Data on City Hall Tower, Philadelphia", was the title of an interesting paper by Mr. Wm. L. Baily, who told of the birds killed by striking this tower, the top of which is at night illuminated by a circle of brilliant electric lights. The other paper of the day was by Mr. F. C. Kirkwood, "On the Occurrence of the Egyptian Goose (*Chenalopex aegyptiaca*) in North America". The evening was devoted to an illustrated lecture on "The Bird Rocks of the Gulf of St. Lawrence", delivered by Mr. Frank M. Chapman before an enthusiastic audience composed of members of the Academy of Natural Sciences and of the Union.

On Wednesday morning, November 15, Mr. Reuben M. Strong, in "A Quantitative Study of Variation in the Smaller American Shrikes", gave an elaborate exposition of his methods in the determination of variation by statistical analysis. Mr. Vernon Bailey described "An Oregon Fish Hawk Colony"; and Mr. F. M. Chapman made some "Further Remarks on the Relationships of the Grackles of the subgenus *Quiscalus*". "A Peculiar Sparrow Hawk", by Mr. William Palmer, and "The Requirements of a Faunal List", by Mr. W. E. Clyde Todd, were followed by an "Exhibition of a Series of Field Sketches Made from Absolutely Fresh Birds, Showing the True Life Colors of the Soft Parts, Mostly in the Breeding Season", by Mr. Louis A. Fuertes, demonstrating the interesting fact that these parts change color very rapidly after death, in some species almost immediately, and that, from ignorance of this, many of our current data are unreliable.

Of more than common interest were "Audu-

bon's Letters to Baird", which, through the kindness of Miss Lucy H. Baird, Mr. Witmer Stone had been enabled to compile, and which he presented as the first paper of the afternoon session. The remainder of this day was devoted to communications illustrated by lantern slides, the first being the "Bering Sea Arctic Snowflake (*Passerina hyperborea*) on its Breeding Grounds", by Dr. C. Hart Merriam. "An Account of the Nesting of Franklin's Gull (*Larus franklinii*) in Southern Minnesota", by Dr. T. S. Roberts, was of exceptional merit—we venture to add unrivalled in the completeness of its delineation of the life history of the species—and graphically illustrated the great possibilities of the camera as an aid to bird study. Other papers were: "Bird Studies with a Camera", by Mr. F. M. Chapman; "Home Life of Some Birds", by Mr. Wm. Dutcher; "Slides Series of Kingfishers, Gulls, etc.", by Mr. Wm. L. Bailey; and "The Effects of Wear upon Feathers", by Dr. J. Dwight, Jr.—the last an amplification and further explanation of observations in the speaker's previous communication. An evening visit to the National Export Exposition, arranged through the courtesy of the local committee, was the closing feature of the day.

The first paper of Thursday was by Dr. A. K. Fisher, who presented various "Notes on Some of the More Interesting Birds of the Harriman Expedition". Mr. Chapman then read, in the absence of the author, some observations "On the Orientation of Birds", by Capt. Gabriel Reynaud, of the French Army, whose careful and extensive experiments with carrier pigeons tend to prove that they are guided by nothing less than the so-called sixth sense—that of direction. Some very entertaining interpretations of the "Language of the Birds" were given by Mr. Nelson R. Wood; and various excellent imitations of the notes and songs of wild birds by Mr. Fuertes. The remaining papers presented were as follows: "The Molt of the Flight Feathers in Various Orders of Birds", by Mr. Witmer Stone; "Notes on the Flammulated Screech Owls", by Mr. Harry C. Oberholser; "On the Perfected Plumage of *Somateria spectabilis*", by Mr. Arthur H. Norton; "A New Wren from Alaska", by Mr. Harry C. Oberholser; and "Some Cuban Birds", by Lieut. John W. Daniels, Jr. Those read by title are subjoined: "The Habits and Structure of Harris' Cormorant", by Messrs. R. E. Snodgrass and F. A. Lucas; "On the Habits of the Hoatzin (*Opisthocomus cristatus*)", by Mr. George K. Cherrie; and "Notes on the Habits of the Great Mexican Swift (*Hemi-*

progne zonaris)", by Mr. Samuel N. Rhoads.

The following day—Friday—a trip to Mill Grove, on the banks of the beautiful Perkiomen, the some time home of Audubon, under the guidance of Mr. Geo. Spencer Morris, appropriately brought to a close what will long be remembered as one of the most profitable, as well as one of the most interesting meetings in the history of the Union.—H. C. O.

THE LARGEST BIRDS.

In the OSPREY for June, the excellent article by Mr. Gurney on longevity of birds was published and commented upon. In the present number, an article on the largest bird that flies, by Mr. J. E. Harting, is republished from the columns of the Field. Mr. Harting is well-known as the accomplished editor of the Zoologist of London, but he has chosen for his article another Journal than his own. His conclusions are (1) that the largest known bird that has ever lived was the *Dinornis maximus* and (2) that the "largest bird that flies"—the heaviest—is the Bustard. Even of this bird, however, Mr. Harting has not given the largest of the recorded measurements. The only ones enumerated in the table of measurements are three respectively weighing 24, 26 and 28 pounds. Lord Lilford, however, in an article on the birds of Spain in the Ibis for 1866, (p. 382.) records one which he saw weighing as much as 32 pounds.

Mr. Harting has also passed over several of the largest birds of prey—the Harpy eagle of America and a couple of related forms occurring in New Guinea and the Philippines. The Harpy eagle, *Thrasactes harpyia*, is apparently the largest. A noble example is living in the Zoological Park of Washington. Application to the superintendent, Dr. Frank Baker, for its measurements was responded to with the information that it is estimated to weigh 28 to 30 pounds. This is of course unsatisfactory and the real weight may be much less, but comparison with eagles shows the great superiority of the Harpy in size and prepares one to consider the guess as an approximation to the truth. The *Pithecophaga jefferyi* of the Philippines is also a very large bird, and one killed in Samar was estimated to weigh between 16 and 20 pounds. (Ibis, 1897, p. 214). What a pity it is that such a cheap and portable article as a spring balance or steelyard can not be carried by a traveller!

Mr. Harting has enlarged on the South American Condor's size but has not referred to the Californian Condor which rivals it in size.

Indeed, many years ago, (in the Bulletin of the Nuttall Ornithological Club for 1880, p. 82.) Mr. Robert Ridgway remarked "It may not, perhaps, be generally known that this species is fully the peer of the Condor in size, the length of the wing and tail averaging even decidedly greater", although otherwise weaker. If the measurements of Byam are correct, however, the Californian bird must take second place by a marked interval.

But in a search afar and above for "the largest bird that flies", one which is often beneath our eyes has been overlooked—the common turkey. The weight that has been assigned to each of the birds in Mr. Harting's table is certainly often exceeded by that savory tenant of the farm yard. Although "the weight of the hen generally averages about nine pounds", the male sometimes becomes exceeding large. Audubon saw one which weighed 36 pounds. Bonaparte "ascertained the existence of some weighing forty". Like Bonaparte, we may regard the reports of weights greater than the last as "fabulous". Nevertheless, very recently paragraphs have appeared in the newspapers to the effect that a certain farmer had one weighing over 70 pounds! Mr. Harting might well object that the last—if existent—would be excluded from his consideration on the ground that it was not "a bird that flies". Indeed, even the wild turkey is much restricted in his power of flight.

ENDURANCE OF THE TURKEY.

Apropos of the turkey as a "bird that flies", interesting data were published in "Recreation" for June, 1897 (p. 431). Capt. C. J. Crane, U. S. A., in an article on "Wild Turkey Shooting", has given the results of extended experience in the old Indian Territory and Texas. According to him, "no other bird in America can run so fast as the turkey, but when caught some distance away from thick woods, they have frequently

been run down and captured by a horseman. They cannot fly more than from $\frac{1}{2}$ to $\frac{3}{4}$ of a mile the first flight, even when thin, and if fat the distance will be less. The second flight will be much shorter; the same with the second run, so that many turkeys have been run down and caught after running and flying from $\frac{1}{2}$ a mile to 2 miles.

"The poor things get so exhausted that they cannot fly any more and cannot run faster than a man can walk. Of course the chase would have to be pushed without any let up, in order to be successful. It is said—and I believe it—that the Indians of Arizona sometimes run down and catch turkeys, in their mountains, on foot".

UTILIZATION OF ZOOLOGICAL GARDENS.

The articles by Mr. Gurney on longevity and Mr. Harting on the largest bird have derived no information from Zoological gardens, and yet the largest collection of living animals in existence was readily accessible to them. The investigator may search in vain for information on such subjects in the reports on their condition and progress. And yet just such information ought to be furnished by such institutions. Many animals are born in Zoological gardens and their life-histories might be traced and should be recorded. Such simple data as the time of acquisition and time of death of an animal would furnish useful elements for some idea at least of the life of others. But rarely are any such data published. The successive editions of the catalogue of animals living in the gardens of the Zoological Society of London would have been much enhanced in value if such information had been given. Reports as to the weight of animals would also be valuable and not less so because it would vary with condition. Why won't the gardens give the information?

Letters.

RARE BIRDS IN RHODE ISLAND.

EDITORS OF THE OSPREY:

PROVIDENCE, R. I., Oct., 1899.

On July 24, 1899, a Little Blue Heron in the white plumage was taken near Wakefield, R. I., and I have added it to my collection. This is the second record for this state. This bird was no doubt one of the flock of seven reported in the October *Auk* as having been seen at Old Lynn, Conn.

A male American Egret was shot near Tiverton, R. I., on the Seaconnet River, August 15,

1899, by an Italian, who saw the bird flying up the river from the ocean and alight on the shore to feed. I was fortunate in securing it for my collection. There are now four records for this bird in the state.

Mr. Fred T. Jencks on October 12, 1899, shot a young Blue Gros-beak in the blackberry bushes, in his garden at Drownville, R. I. His attention was first attracted by the bird's note which was new to him, and on approaching, he found the bird scratching among the leaves in company with Field, Song, and White-throated Sparrows and Juncos. It flew into the bushes and was

speedily secured although badly mutilated. It has been placed in the Charles H. Smith collection in the Roger Williams Park Museum. There are a few records for the other New England states; but this is the first for Rhode Island, the bird being a rare stranger from the south.

H. S. HATHAWAY,
South Auburn, R. I.

THIRD INTERNATIONAL ORNITHOLOGICAL CONGRESS.

We have received from the United States Commission to the Paris Exposition of 1900, (Commissioner General Ferdinand W. Peck.) a prospectus of the Third International Ornithological Congress to be held at Paris in 1900. The character and conditions of the congress are sufficiently explained in the letter and program following.—EDITORS.

EDITORS OF THE OSPREY:

ALBANY, N. Y., *Sept.* 18, 1899.

DEAR SIRS,

I enclose herewith a preliminary outline of the International Congress on Ornithology held under the auspices of the Universal Exposition in Paris in 1900. Will you kindly give the matter such notice in your publication as in your opinion will interest your readers?

Should further information be received on this Congress, or any other congress allied thereto, I shall take great pleasure in forwarding you the earliest information.

Very respectfully,

HOWARD J. ROGERS,
Director Education and
Social Economy.

THE INTERNATIONAL CONGRESSES OF THE EXPO-
SITION OF 1900.

Third International Ornithological Congress.

The Third International Ornithological Congress will be held, under the patronage of the French Government, from the 26th to the 30th of June, 1900, in the series of official congresses of the Paris Universal Exposition. This session has been organized under the direction of the Permanent International Committee named at the second congress, held at Budapest, in 1891. Important questions relating to the classification, habits, migrations, uses, breeding and acclimatation of birds form the matter of discussion and reports of the coming congress. The organizing committee is making every effort to insure the success of the congress by bringing together the chief naturalists of the world. The honorary president is M. Milne Edwards, director of the National Museum of Natural History; the acting president M. Oustalet, the secretary M. de Claybrooke, and the treasurer Baron d'Hamonville, held corresponding posts in the Permanent International Committee. In the Comite de Patronage, comprising foreign specialists adjoined to the French organizing committee, there are the following American members: Messrs. W. Brewster, Cambridge, Mass.; Elliott Cones, Smithsonian Institute, Washington; D. G. Elliot, Field Columbian Museum, Chicago; Clinton Hart Merriam, De-

partment of Agriculture, Washington; Harry C. Oberholser, Biological Survey, Department of Agriculture, Washington; Robert Ridgway, Smithsonian Institute, Washington; R. W. Shufeldt, Washington; and Mr. Stejneger, Smithsonian Institute, Washington.

There will be admitted as members of the congress all delegates of French and foreign governments, and those who pay the subscription fee of 20 francs. Zoological societies and societies of acclimatation, aviculture, and for the protection of animals, may be represented by one or more delegates, the subscription being due for each delegate. Each member will receive the printed proceedings of the congress, and only members will have the right of taking part in the sessions and visits which are being prepared by the organizing committee.

The work of the congress has been divided among five sections, as follows:

SEC. 1. Systematic ornithology—classification; description of new genera and species; nomenclature.

Anatomy and embryogeny of birds. Paleontology; classification, description of new genera and species; ancient faunas, relation of extinct to present species.

SEC. 2. Geographical distribution of birds. Present faunas. Species extinct in historic times. Migration. Accidental changes of place. Appearance of rare species in certain districts.

SEC. 3. Biology, habits, diet, nesting, oology.

SEC. 4. Economic ornithology—protection of species useful to agriculture; destruction of harmful species—hunting. Acclimatation. Aviculture.

SEC. 5. Organization and working of the international ornithological committee. Election of new members. (This section is specially reserved for members of the permanent international committee.)

Papers on the subjects of the program which have been accepted by the committee will be discussed in general session. Questions outside the program may be submitted to the respective sections. All papers must be in the hands of the organizing committee, at least in a summary form containing the conclusions reached, before the 1st of May, 1900. Communications may be made in English, German, and Italian, as well as French; but the publications of the congress will be limited to the French language. Minutes of each meetings will be printed and distributed at once. After the close of the congress a volume of proceedings containing the papers presented to the congress will be published under the direction of the committee. Correspondence relating to the ornithological congress should be addressed to the secretary of the organizing committee, M. Jean de Claybrooke, 3 rue de Sontay, Paris.

ON THE FOOD OF THE CROW BLACKBIRD.

EDITORS OF THE OSPREY:

LINCOLN, NEB., *Oct.* 18, 1899.

During the month of September a flock of about 12,000 Crow Blackbirds made their headquarters in a small grove a short distance from town. I had a curiosity to know what they were living on at this time of the year, so I shot a

number for their "stomach's sakes". I found their stomachs contained approximately.

- 5 per cent. insect remains.
- 11 per cent. weed seeds.
- 75 per cent. grain corn and cane.
- 9 per cent. sand and dirt.

The insect remains were 1 to 2 per cent. ants, neither to be regarded as beneficial nor injurious, and 3 to 4 of beetles, which are to be regarded as injurious. The weed seeds were those of our common field weeds. The grain was about $\frac{1}{3}$ corn and $\frac{2}{3}$ cane.

At first thought the large per cent. of grain looked rather black for the Blackbird, but lets see.

The Crow Blackbird has a good appetite and will eat about $\frac{1}{4}$ pint per day. The flock of twelve thousand in the month's time they were in this vicinity would eat 1,500 bushels of food. Of this 45-60 bushels are injurious insects, 180 bushels noxious weeds, and about 1,100 bushels of grain, or about five bushels of grain to every one of insects and weeds. When we think of the damage that bushels of insects could inflict, and of the labor the farmer would have to destroy the same number of weeds, we see that the Blackbird is not as black as he seems.

J. H. HUNTER.

THE CERULEAN WARBLER NOT AN UNUSUAL VISITOR TO WESTERN AND CENTRAL NEW YORK.

EDITORS OF THE OSPRYE:

MEDINA, N. Y., Oct. 31, 1899.

The writer read with interest the article by Mr. Fuertes in the October OSPRYE upon the occurrence of two rare Warblers at Ithaca, N. Y.

May I not be permitted to comment briefly upon it, as touching the occurrence of the Cerulean Warbler in Western and Central New York? I cannot believe that *D. caerulea* is of so rare occurrence in the territory mentioned as Mr. Fuertes' article would make us to believe, and I am surprised that he has seen no more eastern record for this bird than Lockport, N. Y. Permit me to mention one or two. As long ago as 1889, a list of the birds of Orleans County, N. Y., published by the writer, mentioned this species as not uncommon here, and as *breeding*. This is somewhat east of Lockport; but to go still further east, and still further back in point of time, we find in Rathbun's "*List of Birds of Central New York*", published in 1879, that the Cerulean Warbler is spoken of as a not uncommon summer resident, arriving in May and departing in September, and particular mention is made of a specimen taken at Auburn, which city is even further east than Ithaca, or at least as easterly. But to go still further east, and to the further extremity of the state, we find that

Mr. Frank M. Chapman, in his "*Birds found within fifty miles of New York*," makes mention of the species.

And so I am surprised that Mr. Fuertes has seen no more eastern record than Lockport, N. Y., and I cannot but believe that unless Tompkins County presents conditions which are adverse to the occurrence of this Warbler, that it will be found to be, as it is elsewhere throughout Western and Central New York, a not uncommon summer resident.

CORNELIUS F. POSSON.

BIRD ARRIVALS AT DAWSON.

EDITOR OF THE OSPRYE:

Little has been recorded respecting the birds of the Klondyke and the following notes on the arrivals of those observed from April to July last may be useful.

April 26. First ducks seen flying north on the frozen Yukon.

May 1. A male Barrow's Golden-eye duck killed in some open water in Klondyke River.

May 17. A single Short-tailed Gull hovered over the river opposite Dawson just as the ice broke at 4:15 in the afternoon, and passed down the river with the floating cakes.

May 18. Another Gull seen, also a Peale's Falcon Ducks are common, mostly in pairs; Mallards, Widgeons, Butterballs, Green-wing Teal, Shovelers and Pintails were observed.

May 19. Pectoral Sandpipers.

May 20. Song Sparrow and Juncos.

May 20. Violet-green Swallows, Horned Grebes, Black-throated Plover.

May 22. Yellow-shafted Flicker (no red shafted seen in the country), Kingfisher.

May 23. Sandwich Sparrow.

May 24. American Robin, Bohemian Waxwing, Russet Black Thrush, Spotted Sandpiper, Red-backed Sandpiper. New ducks to appear are Old Squaw and Harlequin.

May 25. Oregon Robin, White-crested Sparrow, Sand Swallow.

May 30. Yellow-bellied Flycatcher.

Fresh eggs of White-crested Sparrow and Juncos were found in the Dawson marsh the forepart of June, and a large colony of Violet-green Swallows are nesting in the cliffs at the mouth of the Klondyke. Young Alaskan Jays large enough to fly were observed the forepart of June.

June 5. Bohemian Waxwings are paired off in many localities and will evidently nest here.

Birds as a rule are very scarce—no Bluebirds of any kind, very few Geese, no Cranes, nor Waders of any species except Sandpipers.

GEO. G. CANTWELL,

Dawson, Y. T.

Notes.

BIRDS IN WINTER.

To-day the feathered preachers sing,
Amid the holly,
And claim a title for all they bring;
And some are thin and poor and lean,
And some, like pluralist or Dean,
Are fat and jolly.

They talk as well as Asquith talks,
Or Clarke, or Carson.
They walk as King or Emperor walks,
They preach their sermons, clear and terse
And musical— I've heard far worse
From many a parson.

That fellow in a suit of black
(A prime Dissenter),
With lifted eyes and rigid back,
Is telling (you can hear him tell)
His friends they're nearing fast to Hell
They're doomed to enter.

The other with an air polite
(A genial fellow),
Is sure to rise; his style is quite
The ton; he'll never damn too loud
The voice of the titled crowd.
He's sleek and mellow.

One preaches true self-government
(Like Tell or Guiteau),
And argues it was never meant
That one should hold his fellows down,
He little reeks of priestly frown,
Or Bishop's veto.

They sit, like Doctors, and debate
The weightiest questions—
Predestination, Will, and Fate—
The boundaries of wrong and right,
And, when they can't agree, they fight—
Like earnest Christians.

WILLIAM HOLLOWAY, in *The Spectator*.

NEW YORK'S WINTER BIRDS. By mid-November the birds hereabouts have settled down to their winter habits. Only a little further south, indeed, distant skies are still peppered with blackbirds, myriad specks, which seem mere wind-blown clouds, and even in these parts the plaintive cry of the White-throated Sparrow was heard less than three weeks ago. Most of the migratory birds have been gone since the early frosts. One may still see, indeed, flurries of distracted robins, faded and hungry creatures which seem to have decided upon staying the winter. They are oddly unlike their saucy selves of last June. They fly in silence, light warily, and soon leave their perch at the approach of a human being. Much in the same state are the young Wood Thrushes that still linger, some of them because they dare not trust their wings in a long flight southward.

Of the winter birds the sparrows are the most numerous, for New York is the metropolis of sparrowdom. Any one that has watched the conduct of the sparrows in October may well suspect in them the remnants of a migratory in-

stinct; for they then get together in noisy flocks, as if discussing some question of moment to the republic of the sparrows. All ends in discussion, however, and they finally settle down to the cosy comfort of their ivy-tods and ever-greens, for they are an urban folk, loving the life and motion of the town, intimate human companionship, the sunshine of the wintry streets, and the thousand and one other charms that make New York a place of irresistible attraction for birds and men.

The meadow lark is at home in the suburbs now as ever, and the salt marshes are daily haunted with the exquisite shrill sweetness of his kissing call. When bright days come in December, and the meadows of the Sound are mellow with golden haze, and russet grass, and great melting mounds of cured hay, then that loud, clear, heartsome call of the lark seems like a harbinger of spring.

Marshy woodlands, interspersed with ever-greens, are the favorite haunts of the shyer winter birds. Here hide little flocks of belated robins, feeding on whatever has escaped their migrating brethren. Here, too, flits the Cardinal Grosbeak, a winged live-coal, sooner or later, when the snows lie deep, to be driven by hunger to the stables and dooryards. As he flits across the snow he seems like some tropic stranger belated on his homeward journey. In hard winters the Cardinal Grosbeak comes to feed with the aquatic fowl in Central Park, a privilege which he shares with pigeons that make daily visits from New Jersey, Long Island, and all parts of the city.

The great reservoir in Central Park on windy November days seems breaking into white-caps, which, upon closer examination, prove to be flocks of gulls. The birds descend upon the surface of the water at the part of the reservoir most distant from the side usually approached by visitors. The gulls are at long intervals joined by a stray wild duck, his eye caught, as he flies high in air, by the inviting spread of the water. A record of the birds visiting Central Park would include a surprisingly large number of those not ordinarily seen in these parts.

Now and then one sees in the northern suburbs the tiny winter wren, like a spry little mouse, hopping from stone to stone of an old fence, or slipping almost noiselessly over the fallen leaves. Before the English sparrow came the wren sang in every village dooryard, but he is rarely seen now. The wren made a manful fight for existence, but was everywhere ousted by the sparrow. A close observer of bird ways recommends for the wren a house pierced with an auger hole too small to admit the sparrow. The wren easily makes use of such a door and triumphs over her enemies.—*The Sun*.

RICE BIRDS IN SOUTH CAROLINA.—There are now countless millions of Rice Birds in lower Carolina—more than for many years, despite the great destruction of them for market and as a protection to the crops in the last few years **

They arrive in South Carolina, August 26, and by October 20, not one can be found in the state.

In New England this bird is known as the "Bobolink", in Maryland as the "Reed Bird", and in South Carolina as the Rice Bird. Planters will risk a frost in spring or in autumn to avoid the ravages of the pests. They come in millions and are ravenously fond of the tender young rice plants. For each sprout picked out of the ground four stalks are lost, for each seed produces four stalks. The stalk has an ear like the head of a stalk of wheat. Each ear of rice contains from 140 to 200 grains. Thus one little peck of his bill causes a destruction of over 600 grains of rice in the embryo. As there are such myriads of these nomadic and peripatetic pests, the damage is enormous.

"Up to within the last few years all the birds put on the market were killed with shotguns, but the negroes above Georgetown have adopted a new method and one more profitable to themselves. The hunter climbs the tallest cypress tree on the edge of the marsh and spots the droves of birds as they settle for the night.

"About 9 o'clock the hunter paddles his boat into the marsh and approaches as near as possible to the roost. His only armament is a bundle of pine fagots and a gunny sack. Lighting a fagot, he approaches the roost, which is always in a growth of tall weeds or reeds. The birds perching on the branches of the rushes are blinded by the light and make no attempt to fly. Beginning at the bottom of the reed, the hunter picks off the birds as he would fruit from a tree. The birds bring 15 cents per dozen and twenty-five dozen is considered an average night's work".—*Chicago Inter Ocean*.

THE TURKEY BUZZARD'S FLIGHT.—In a recent ramble, I took special notice of the flight of the Turkey Buzzards. Without the flap of a wing they sailed around and around, one of them raising higher and higher until he was a mere speck in the sky. A brisk breeze was blowing at the time, so that the birds in flying in one direction at least must have moved against the current, and yet, so far as I could detect, they soared with the same ease and dignity in one direction as another.

By and by two of them decided to sail off to the northward. This they did in an almost straight course, gliding along without a movement of the wings that I could see. While they seemed to move rapidly, but had an air of extreme leisureliness, yet their flight must have been swifter than was apparent, for in a very short time, perhaps a minute or a minute and a half, they had gone over a mile, and were circling over the city in which I live.

In contrast with their poising flight, I observed the labored locomotion of a crow, which was compelled to flap his wings constantly as he flung himself over the river bluffs. Of course, there are still some unsolved problems on the subject of avian flight, as Dr. Coates has indicated in his valuable "Key". It has seemed to me that some competent ornithologist might make some special investigations in this line, and thus do a service to this cause of science.

For my part, I cannot bring myself to kill and dissect birds, but some one who understands bird anatomy and has access to a large collection of skins and mounted specimens might, it seems

to me, make a special comparison of the buzzard's and the crow's wings, and determine the difference in their anatomical structure, their form, the position and shape of the pinions, and so on. In this way he might be able to tell us why the crow must flap its wings so vigorously, while its larger relative, the buzzard, is able to glide forward with little or no apparent effort. Would not that be an interesting study. Of course, the point is not how the buzzard can maintain itself in the air, for that is evident, but how it can move about, even against an air-current, without a movement of its wings.

I have wondered whether the buzzards and other sailing birds do not have some way of moving their pinions that is imperceptible to our eyes, so that they may adjust them to the air currents, just as the human mariner sets his sails. There may be nothing in this view, but if there is, a careful examination of the wings might reveal it.—LEANDER S. KEYSER, Atchison, Kansas.

A MAN KILLED BY A WOUNDED LOON.—The Loon, or great northern diver, is a powerful bird. The following instance of one of them killing a man happened a few years ago.

A young Micmac Indian, living at Grand Lake, Nova Scotia, wanted to get the skin of one of these beautiful birds to present to his mistress on her birthday.

One day the youth, who was an adept at imitating the peculiar sobbing cry of the Loon, succeeding in calling a bird within shooting distance. His shot, however, failed to kill outright, and the bird, although so severely wounded that it could neither swim nor dive, yet retained sufficient life and strength to remain upright in the water.

The boy, thinking that his game did not need another shot, swam out to retrieve it; but when he approached near enough to seize the bird, it made a dash at him, sending its head and neck out with a spring like an arrow from a bow. It was only by a quick duck of his head that the Indian succeeded in evading the blow. He swam about the Loon several times, attempting to dash in and seize him by the neck, but the wary bird succeeded in foiling each effort by continually facing him, and lunging out with his powerful neck.

The Indian then swam out within a few feet of the bird, and diving under him, with considerable skill caught him by the legs. He carried him under, and although the bird struggled fiercely, managed to retain his hold. But when they both rose to the surface again, a battle royal began, the Indian seeking to carry his prize ashore, and the bird attempting to regain his freedom. The bird, however, was too much for his foe, and before the Indian had covered a yard on his shore-bound course disabled him with a vicious blow from his beak full on the naked chest.

The effect of this blow was almost instantaneously fatal, for the beak penetrated close to the youth's heart.—*Exchange*.

BRUNNICH'S MURRE has again made its appearance in the neighborhood of Washington, D. C., two specimens having been recently

presented to the National Museum. One was shot at Four Mile Run, Va., November 22, 1899, by Thos. Taylor, jr., and donated to the Museum by Mr. Henry Talbott; the other was captured alive by Mr. R. S. Shepherd, near Kenilworth, between Chevy Chase and Kensington, Md., on November 24. Both birds were immature and

were sent to the Museum in the flesh.—CHAS. W. RICHMOND.

A NEW ORNITHOLOGICAL CLUB AT PRINCETON, N. J., has been constituted under the direction of Mr. W. E. D. Scott in connection with Princeton University.

Literature.

BIRDS OF EASTERN NORTH AMERICA KNOWN TO OCCUR EAST OF THE NINETIETH MERIDIAN.—Part II. Land birds. Key to the Families and Species. By Charles B. Cory. Special edition printed for the Field Columbian Museum, Chicago, Ill., 1899. [sm 4to vx, 131-387 p., vignette]. The first part of this work appeared in August and was noticed in the September number of the OSPREY. The second part has the pagination continued from the former, and is naturally on the same plan. The key is, or rather the many keys are designedly artificial and based to a large extent on measurements and especially those of the wings. For example, the main division of the land birds is into five "groups" distinguished by the length of the wings; consequently the same natural groups may be represented in the key under several categories. The families nevertheless are made to follow in natural order—or rather the order adopted by the American Ornithologists' Union. This arrangement is definitely adopted in "A list of the birds of Eastern North America" appended (p. 325-387). 570 forms (species and subspecies) are named and numbered, and after their numbers are appended (within parentheses) those of the "A. O. U."

The work is illustrated with the same profusion and from the same sources as the first part.—T. G.

A FIRST BOOK IN ORGANIC EVOLUTION. By D. Kerfoot Shute. Chicago. The Open Court Publishing Company, 1899.—12mo, xvi, 285 p., 12 pl. (9 col). This is an excellent primer of the Development Theory and was prepared originally in response to the wants of students of the Columbian University in which the author is Professor of Anatomy. Experience has shown him what such students need, and he has applied himself to meet these wants and has given the benefit of his labors to others of like condition. After an "Introduction" defining evolution he treats, in successive chapters or "sections", of (1) "Organic cells, the visible units of life"; (2) "Heredity with variation"; (3) "Unstable environment"; (4) "Transmutation of living form"; (5) "Natural selection"; (6) "Evolution of man"; and concludes with sections on classification, etc. The most approved views as to the genealogical tree of animals are given in a "Diagram of Development" (p. 183). This has been prepared especially with refer-

ence to the exhibition of the ancestry of man, and expresses the view that man is the offspring of a creature very like the living chimpanzee and gorilla, and that both originated from forms similar to, but more generalized than, the old world monkeys. The birds are properly derived from a reptilian stock long ago extinct. Two of the colored plates illustrate birds.—T. G.

A LIST OF BIRDS COLLECTED ON THE ISLAND OF NEW PROVIDENCE, BAHAMAS, by J. Lewis Bonhote, appears in the *Ibis* for October, 1899, (7. S., vol. 5, p. 502-520). Fifty-nine species are enumerated as observed during a year's residence. "Three or four species not hitherto recorded from New Providence" are specified.

MEMOIRS OF THE BISHOP MUSEUM OF HONOLULU have been commenced with a first number devoted to the consideration of the remarkable feather work of the Hawaiians. The memoir is by the director of the Museum, Dr. W. T. Brigham, and is in quarto form with 83 pages and 15 plates.

FIELD NOTES ON BIRDS COLLECTED IN THE PHILIPPINE ISLANDS IN 1893-6, by the late John Whitehead, (see OSPREY, October, p. 31) have been published in four parts in the *Ibis* for 1899. Three hundred and fifty-nine species are commented on, largely in inconsiderable notes on specimens obtained.

AN ILLUSTRATED MANUAL OF BRITISH BIRDS, by Howard Saunders, in its second edition has been completed by the publication of the twentieth part. 348 species are described of which 199 have been known to breed in the islands and 74 have been found less than six times. The latest "find" is an American Spotted Sandpiper.

THE HOUSE SPARROW (THE AVIAN RAT) in relation to agriculture and gardening is the title of a small volume written by W. B. Tegetmeier and published by Vinton & Co., of London.

A SUPPLEMENTARY VOLUME OF THE CATALOGUE OF BIRDS by R. Bowdler Sharpe is mentioned among the works "in preparation" to be published by the British Museum, in the last "Return" to Parliament by the British Museum.

THE OSPREY.

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NUMBER 5.

Original Articles.

BIRDS OF THE ROAD.

By PAUL BARTSCH, Washington.

Sometime ago there was an announcement in the OSPREY, that I would contribute a series of articles on the birds of the Road. I selected this subject for a number of reasons.

Every one travels more or less on the road and many of us are devotees of the silent iron steed, which bears us lightly over the way. If I succeed in shortening the weary toil of some of my fellowmen as they plod to and from their daily work, by directing their attention to the many pleasures and surprises which good Mother Nature has ever in store for the watchful eye; if I succeed in turning the attention of the wheelman to the many voices which are always atune with their surrounding and greet him from field and lane, from hill and dale, from the timber waste to the watery waste; if I succeed in directing the weary one, fatigued by sheer lack of ought to do, to nature; if I succeed in imparting the tenth of pleasure which I feel as I travel along some highway, or foot-path where every leaf and blade and flower greets me alike with the birds and all nature, I shall be happy and feel that I have accomplished what I have set out to do.

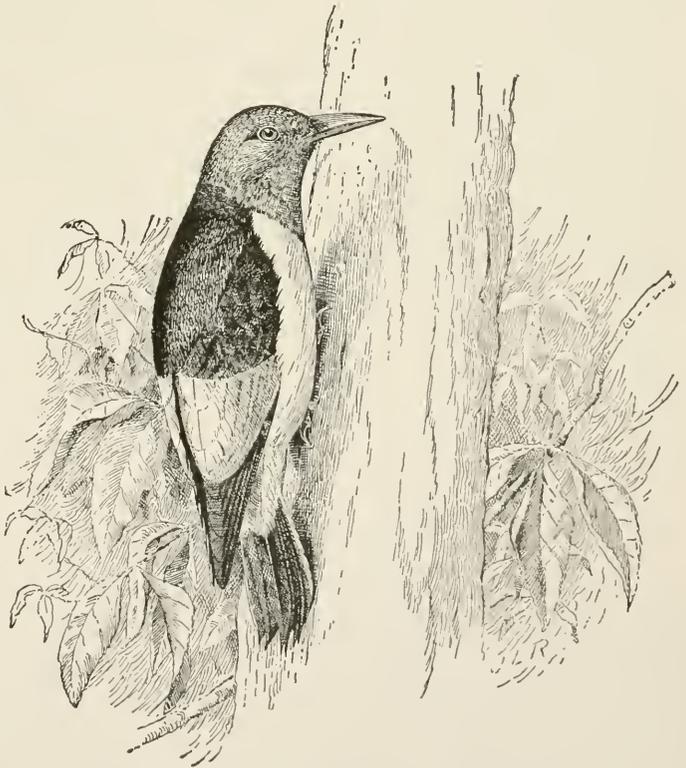
1. MIDWINTER.

We have been favored with a most remarkable period of good weather this season and the lovers of nature have had ample opportunity to indulge in outdoor pastime. Many, too, have taken advantage of and enjoyed the balmy days of early December, which were more like the debut of gentle spring than the chilly grasp of the icy king.

December 17 was an ideal springday which tempted or drew every one forth from his four walls to the open air and sunshine. We visited Congress Heights on this day—a place which, though teaming with bird-life, seems ever to have been neglected in connection with

the District of Columbia avifauna. Here we have quite an area of timber land, extending from Nicholas avenue to the B. & O. Railroad. This area is traversed by a number of roads and foot paths, ever inviting to the pedestrian or the man with the silent steed.

As we cross Randall Park our ear catches the rattling sound of a Red-head who has here



Red-headed Woodpecker. *Melanerpes erythrocephalus*.
(From Bulletin 7 of Division of Economic Biology D. A.)

taken up his winter quarters. He casts a sly glance at us from behind a limb and leaves for a neighboring tree as we approach. He seems

to be the only bird in charge of this place, unless we include the noisy crow and his hoarse relative, the Fish crow, as occupants of the park. Deep in the timber, a Flicker is sounding his high note but no response rewards his call.

As we follow the footpath to the left, down through the forest, we see many crows, and a few insulting remarks in crow language draw the wrath of a whole pack upon us. Right here it is that we see for the first time a specimen of the Black Vulture (*Calharista atrata*) within our territory. We are not the least in doubt, because our only other representative of the tribe is present also, and gives us a chance to make a comparison.

When flying the Black Vulture seems smaller but of broader wing. The posterior edge of the spread wing and tail form an almost continuous line, which is not the case in the Turkey Buzzard or Vulture (*Cathartes aura*) whose caudal appendage projects considerably. We continue our march, noting naught but a moth which we have frightened from a twig, until we reach the pine coppice. Here we fall in with one of those motley roving crowds, which one frequently meets at this season. Such a band adds life and beauty to the most cheerless of the dreary days, and makes the woods resound with joy and gladness.

A flock of Myrtle warblers—perhaps two dozen—are sporting in the branches of the young tulip trees which skirt the pines. The metallic click click, click click, click click, causes us to turn our heads in the direction of a single Crossbill flying over. We are, however, soon called back from our meditation by the many voices which surround us. Tufted tits and Chickadees vie in the expression of their notes and a Brown creeper occasionally adds his long drawn utterance as he works his spiral course up some trunk.

The White-bellied and Red-breasted Nuthatch are also present, but the latter can not pronounce the loud quank, quank, quank, as it busily gleans the trunk and branches. Its voice is weaker and sounds smothered. Kinglets, ever busy, skip about the dense pine foliage and lisp their lively zip zip, ze ze, as they flirt their wings.

At the base of the pine coppice we have an old moat, a relic of the days when north and south were at strife. This passes through an extremely small swampy spot, where a silent Winter Wren bobs out his solitary existence. He is a curious bit of nature, as interesting as he is comic.

On the outskirts of the timber near the little creek, on its southern border, we surprised a small bunch of Purple finches feeding in the very top of a tall tulip tree. As we follow the little rill in its downward course, we soon get into a tangle of briers, tall weeds, brush, willows, locust, etc., etc. Here we meet another merry band, but this time of an entirely different nature. It seems composed of hundreds of individuals, including Song, White-throated, Tree, Field and Chipping Sparrows, with a sprinkling of pretty Juncos and several pairs of our beautiful Red-birds. They are all more or less silent, only sounding their call notes, or

answering in the low under tone of the season.

We have crossed the track and have approached the river. Our eye scans the wide expanse of water. The city with its many prominent landmarks lies before us; the capitol, the gilded dome of the library, and the arsenal right opposite; to the left the monument, and away off, on the hill beyond it, Arlington, the final resting place of many a hero, where

"On fame's eternal camping ground
Their silent tents are spread,
And glory guards with jealous round,
The bivouac of the dead".

Our eyes catch sight of a few white flecks floating through the clear sky. How they glisten as they present a certain view to Old Sol, then almost disappear. They are our beautiful Bonaparte gulls, which remain with us as long as the weather is moderate enough to keep the river open. An occasional Herring gull can be distinguished by its larger size and slower beat of wing. One after another passes by us and we note that most of them are young birds, which have as yet to put on their pearly white garb. Quite a distance from shore we note a flock of ducks floating lightly on the mirrory surface, while three Grebes appear to be holding a natatorial contest, in which diving appears to be the chief number.

Reluctantly we turn away from a scene so calm and beautiful. We regain the timber and by another path advance to the top of the hill which affords a more elevated outlook upon the river and the city. At last we return to our starting point, regretting the approach of the night shades which are already hovering to wrap all this beauty in their mantle of somber dusk.

December 24.—Drizzle, drizzle and rain, interchangeable, seems to be the order of the day. We had promised to procure a spruce for a Christmas tree, but as always, have failed to do so. We therefore start out for a substitute a pine—Rubbers, leggings, mackintosh, and slouch hat are donned. Pat, pat, pat we waddled along the muddy road on our way to Fort Stanton which we intended to leave minus a fine young pine.

As we saunter along through the pines we suddenly fall in with a small flock of Juncos, which seem to be not in the least disconcerted on account of the rain, but appear to be holding a Sunday meeting. They lend emphasis to their remarks by the opening and closing of their tail, thus exhibiting the white outer feathers of that member. I wonder if Junco really knows how the display of these bits of white set off his trim form! A number of Crossbills are also present and one even permits me to approach within several feet of him. A little later, at a different place, I heard one flying—crossbills always sound their click click, click click, click click, when on wing, and I placed my finger to my lips and gave the customary squeek, which lures so many of our birds; straightways he accepted the invitation, changes his course and alights in the pine above me. After looking for good company in vain for a while, he resumes his journey. We note a few goldfinches in a similar

manner and several crows who are silent and unwilling to proclaim their species.

As we follow the timber back toward the house a Bald eagle, which has been soaring low along the hill to avoid the high wind, receives a bad scare, for he had come within fifty yards of us before he discovered our presence. He scolded us with an angry cackle as he sought to increase the distance.

the city like a beam of some gigantic search light, lingering but a moment upon some favored spot, then all would drop back to the dreary aspect of the cloudy day. Words would fail to describe this wonderful effect of light and shade as well as the magnificent formation of the clouds which seemed ever changing as they were hastened on by the furiously raging wind.



The Flicker. *Colaptes auratus*.
(From Bulletin 7 of Division of Economic Biology D. A.)

January 1—What a change! But a week ago Dandelions and that harbinger of spring, *Draba verna*, were in bloom everywhere, to say nothing of many of our cultivated shrubs. And now the ground is covered by snow, the river frozen; skating is the ruling passion, and we fall in line. Bird life is at a premium. The cold northwest blast drives them to seek denser shelter. In places where the river is left open we find hosts of crows, looking for stray morsels upon which to subsist until the weather man will bring another more favorable spell. I noticed these black brethren kissing in broad daylight in the Smithsonian grounds two weeks ago. No doubt the warm weather had caused them to dream of love, home and swinging cradle. Their voice has more of a ring today, there is more business in it. The soft love strains seem to have been frozen out. Poor fellows! I feel real sorry for them.

Aside from a few barking Song sparrows snugly housed in a sheltered brush heap we note nothing. Cold and high wind do not appear to be conducive to ornithological observations.

In the meantime it has ceased raining and every now and then there is a rift in the clouds and Old Sol sends forth a ray which passes over

in a sheltered brush heap we note nothing. Cold and high wind do not appear to be conducive to ornithological observations.

ESTHETIC BIRDS:

THE BOWER BIRDS OF AUSTRALIA AND NEW GUINEA.

By THEODORE GILL, Washington, D. C.

Perhaps the most remarkable manifestation of an esthetic instinct known among animals outside of man is exemplified by certain birds of Australia and New Guinea collectively known as Bower Birds. These constitute what has been called the subfamily Ptilonorhynchinae (or Ptilorhynchinae) and have been referred to the families Paradiseidae and Timeliidae as well as differentiated from all others as a peculiar family Ptilonorhynchidae. "Their habits" seemed to Dr. R. Bowdler Sharpe "to associate them with the Ground Thrushes and Babbler, of which they will form an outlying group with affinities towards the Crows and Paradise birds." Hence they were formerly placed by Dr. Sharpe among the Timeliidae, a heterogeneous assemblage without common distinctive characters—"a refuge for the destitute." Dr. Sharpe later, however, isolated the

group as an independent family. Later still, the Hon. Walter Rothschild, a notable collector and student of the Birds of Paradise, has associated them with the latter in the same family—Paradiseidae—without even recognizing a subfamily distinction between them and the true Birds of Paradise. With these conflicting views confronting us, it may be best to accept provisionally the group Ptilonorhynchinae. We must admit, however, that no characters of family value have as yet been shown to distinguish the group from the Corvidae, much less from the Paradiseidae.

But whatever may be their relations, the Ptilonorhynchinae form a natural group restricted to the Australian or Austrogean zoological realm and exhibit more or less agreement in ecological characters—especially nesting and esthetic habits.

The popular names by which they are mostly known are Bower birds and Cat birds.

Bower-bird appears to have been first given by Gould in his Birds of Australia and designed to express the remarkable faculty characteristic of the typical representatives of the group. It appears originally to have been a "book-name" rather than a vernacular one. The best known species of the group—*Ptilonorhynchus violaceus* or *holosericeus*—had been generally named by the English colonists of Australia Satin-bird on account of its soft shining plumage "closely resembling satin" even to the eyes of ornithologist Gould. Cowry—a name, by the way, familiar as that of a group of polished shells—was a name current among the natives of the coast of New South Wales.

The common name of various other species of the group was and is Cat bird.

It will be remarked that the name Cat bird is thus used in Australia for a very different group from that with which the same designation is so familiarly connected in America, and therefore the necessity of the scientific name in addition to the vernacular one becomes manifest. The name is applied in Australia for the same reason that it is in America—the resemblance of the bird's utterance to that of a cat; it recalls "its lamentable noise, not unlike that of a cat, but more that of a crying child."

The Cat-birds of Australia "are included in the Bower-bird family" but, according to Mr. Campbell, "so far as observations have gone, they do not build bowers, nor have any particular playing-places been noticed by observers. Perhaps they possess some insignificant playing-place merely a bare spot of earth, with a few leaves placed thereon, like the play-ground of the Tooth-billed Cat-bird (*Scenopæus*)—or perchance the birds select a stump or log, which they frequent to play, like the Rifle-bird (*Ptiloris*).

A most interesting and well illustrated summary of what has been ascertained respecting the Australian representatives of this group has been published recently by Mr. Archibald J. Campbell, of Melbourne, in the Proceedings of the Royal Physical Society of Edinburgh. His article is entitled "Nests, Eggs, and Playing grounds of the Australian Ptilonorhynchinae, or Bower-birds and their allies." (Session 1897-98, February 1899, pp. 13-41, pl. 1-3.)

The bowers and nests or bowers alone of eleven species are described and partly illustrated by Mr. Campbell. These species are the Satin Bower-bird (*Ptilonorhynchus violaceus*), the common Cat-bird of New South Wales (*Eluroedus viridis*), the Spotted Cat-bird (*Eluroedus maculosus*), the Spotted Bower-bird (*Chlamydodera maculata*), the Yellow-spotted Bower-bird (*Chlamydodera guttata*), the Great Bower-bird (*Chlamydodera nuchalis*), the Queensland Bower-bird (*Chlamydodera orientalis*), the Fawn-breasted Bower-bird (*Chlamydodera cerviniventris*), the Tooth-billed Cat-bird (*Scenopæus dentirostris*), the Regent bird (*Sericulus melinus*),

and the Golden Bower-bird (*Prionodura newtoniana*).

The names thus given are those used by Mr. Campbell. If we should apply the canons of nomenclature almost universally adopted by American ornithologists, we would have to change several. *Eluroedus* would be *Ailuroedus*; *Chlamydodera*, *Chlamydera*, and *Scenopæus*, *Scenopæetes*. The latter of the equivalent names will be used except in quoted paragraphs.

THE BIRDS.

The Bower-birds have no very distinctive characters and no trenchant common characters. Some of the older naturalists failed even to appreciate their relations. Swainson, for example, placed the two species known to him in distinct families far removed from each other referring *Ptilonorhynchus* to the family *Sturnidae* and sub-



Nest of Satin Bower-bird. *Ptilonorhynchus violaceus*.
Reduced from Brehm's Thierleben.

family *Lamprotorinae* and *Sericulus* to the family *Merulidae* (*Turdidae*) and subfamily *Oriolinae*. The adjoining illustration of the Satin Bower-bird will give a better idea of its appearance than any description or comparison.

The latest authority on the Bower-birds, the Hon. Walter Rothschild, admits 8 genera and 19 species, although he does not separate them in a different category of any kind from the Birds of Paradise. He has them together, however, in regular sequence as the first eight genera of Paradiseidae. The names of the genera and the number of species in each only can be given here. They are

<i>Ptilonorhynchus</i> ,	-	1 species.
<i>Ailuroedus</i> ,	- -	6 species.
<i>Scenopæetes</i> ,	- - -	1 species.
<i>Chlamydera</i> ,	- - -	5 species.
<i>Xanthomelus</i> ,	- - -	1 species.
<i>Amblyornis</i> ,	- - -	3 species.
<i>Sericulus</i> ,	- - -	1 species.
<i>Prionodura</i> ,	- - -	1 species.

Two of these genera—*Xanthomclus* and *Amblyornis*—are confined to New Guinea; all the others are represented in Australia, although *Ailuroedus* and *Chlamydera* have representative species in New Guinea.

BOWERS AND PLAYING-GROUNDS.

It appears that there is considerable difference between the various species as to the preparation of their play grounds and the character of their bowers or analogous structures.

The most common type is that exemplified by the bower of the Great Bower-bird (*Chlamydera nuchalis*). The one here represented was "about 30 inches through the avenue, which was about 18 inches wide at either end, and with walls about the same dimensions in height. The bower was built of fine twigs, and heaped about, principally at the entrance, with bleached shells. The centre of the avenue also contained a few shells and stones." This kind of



Bower of Great Bower-bird.

Reduced from Proceedings of the Royal Physical Society.

bower, in all essentials, is made by the representatives of the genera *Ptilonorhynchus*, *Chlamydera* and *Scriculus*.

Another type of esthetic development is manifested by the Tooth-billed Cat-bird of North Queensland, *Scenopoetes dentirostris*. According to Mr. Keudall Broadbent, "its bower, or dancing ground is of a unique description; a

small portion of the ground of the scrub being rendered perfectly bare for the space of a square yard or so, save the presence of seven to nine large leaves, which the bird has placed therein, and with which it plays. These leaves, which are those of a particular kind of tree, it renews every morning.

Mr. Le Souëf informed Mr. Campbell that "during his peregrinations in the Bloomfield River district he came across about a dozen play-grounds of the Tooth-billed Cat-bird. They were found in the dense scrub of the high country. He was usually attracted to the particular spot by the birds whistling near.

"Upon the play-ground is placed about nine oval-shaped moderately-sized (about 3 inches long) leaves, a few inches apart. Mr. Le Souëf agrees with Mr. Broadbent that the leaves are from one kind of tree, with the additional information that the leaves are always placed face downwards—perhaps the soft, lighter-coloured appearance of the underside of the leaf is more pleasing to the birds".

From this comparatively simple plan of ornamenting the play-ground, the transition is easy to the Cat-birds of the genus *Ailuroedus*. In the words of Campbell, "Although these two species of Cat-Birds are included in the Bower-Bird family, so far as observations have gone, they do not build bowers, nor have any particular playing-places been noticed by observers. Perhaps they possess some insignificant playing-place—merely a bare spot of earth, with a few leaves placed thereon, like the play-ground of the Tooth-billed Cat-Bird (*Scenopæus*)—or perchance the birds select a stump or log, which they frequent to play, like the Rifle-Bird (*Ptiloris*).

In striking contrast with the Cat-birds is the Gardener bird—*Amblyornis inornatus*—of New Guinea. This species builds a wonderful structure and merits a special article which will be published in the next number of the OSPREY.

The bowers of the Satin Bower-bird—*Ptilonorhynchus violaceus*—were the first made known and they were described by John Gould in his Handbook to the Birds of Australia (Vol. I, pp. 443-444) in the following terms.

"The extraordinary bower-like structure, alluded to in my remarks on the genus, first came under my notice in the Sydney Museum, to which an example had been presented by Charles Coxen, Esq., of Brisbane, as the work of the Satin Bower-bird. This so much interested me that I determined to leave no means untried for ascertaining every particular relating to this peculiar feature in the bird's economy; and on visiting the cedar-brushes of the Liverpool range, I discovered several of these bowers or playing-places on the ground, under the shelter of the branches of overhanging trees, in the most retired part of the forest; they differed considerably in size, some being a third larger than others. The base consists of an extensive and rather convex platform of sticks firmly interwoven, on the centre of which the bower itself is built; this, like the platform on which it is placed, and with which it is interwoven, is formed of sticks and twigs, but of a more slender and flexible description, the tips of the

twigs being so arranged as to curve inwards and nearly meet at the top; in the interior the materials are so placed that the forks of the twigs are always presented outwards, by which arrangement not the slightest obstruction is offered to the passage of the birds. The interest of this curious bower is much enhanced by the manner in which it is decorated with the most gaily-coloured articles that can be collected, such as the blue tail-feathers of the Rose-hill and Pennantian Parrakeets, bleached bones, the shells of snails, &c.; some of the feathers are inserted among the twigs, while others with the bones and shells are strewn about near the entrances. The propensity of these birds to fly off with any attractive object, is so well known to the natives, that they always search the runs for any small missing article that may have been accidentally dropped in the brush. I myself found at the entrance of one of them a small neatly-worked stone tomahawk, of an inch and a half in length, together with some slips of blue cotton rags, which the birds had doubtless picked up at a deserted encampment of the natives.

"It has now been clearly ascertained that these curious bowers are merely sporting-places in which the sexes meet, and the males display their finery, and exhibit many remarkable actions: and so inherent is this habit, that the living examples, which have from time to time been sent to this country, continue it even in captivity. Those belonging to the Zoological Society have constructed their bowers, decorated and kept them in repair, for several successive years.

These bowers and playing grounds are pre-

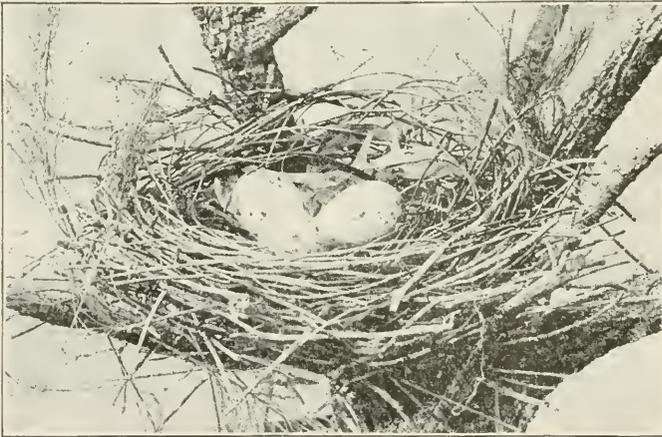
log, the ground being strewn with moss, flowers, yellow and blue Lory parrot's feathers, small bones, and snail-houses, for about a yard in diameter. In the middle is erected a bower about 18 inches in height. When completed, several birds of both sexes run round and through the archway or avenue, picking up, in their joy, some of the nesting (? bower) materials and tossing them about, and we may guess, in their own way, choose partners."

The manner in which the structures are built up was noticed in a letter received from the late F. Strange by John Gould, in which he says:

"My aviary is now tenanted by a pair of Satin-birds, which for the last two months have been constantly engaged in constructing bowers. Both sexes assist in their erection, but the male is the principal workman. At times the male will chase the female all over the aviary, then go to the bower, pick up a gay feather or a large leaf, utter a curious kind of note, set all his feathers erect, run round the bower, and become so excited that his eyes appear ready to start from his head, and he continues opening first one wing and then the other, uttering a low whistling note, and like the domestic Cock, seems to be picking up something from the ground, until at last the female goes gently towards him, when, after two turns round her, he suddenly makes a dash, and the scene ends."

NEST AND EGGS.

It must be distinctly understood that the bowers or play-grounds have nothing whatever to do with the nests. The nests are built far away and generally in a tree at some height from the ground. They are difficult to find and



Nest of Satin Bower-bird
Reduced from Proceedings of the Royal Physical Society.

pared for courtship and as a preliminary to nesting. Mr. Hermann Lan communicated to Mr. Campbell the following note respecting the operations of the Satin Bower-Bird.

"Before nesting begins, the birds build up a play-ground (bower). The finest bowers are nearly in all cases on the sunny side of a lying

Gould was unable to learn anything about them. He says—

"I regret to state, that although I have used my utmost endeavours, I could never discover the nest and eggs of this species, neither could I obtain any authentic information respecting them, either from the natives or the colonists."

Since then, various nests have been found. They were placed in trees at elevations above the ground varying from 10 to 30 feet and mostly "near the trunk of the tree, just where the smaller twigs branch off near the topmost part." The typical nest was open, shallow, about 7 or 8 inches wide and 5 inches deep; "somewhat loosely constructed of twigs and lined inside with leaves (*Eucalyptus*). The eggs were 2 or 3 in number, well proportioned, shell moderately fine in texture; gloss just perceptible upon surface, variously colored dark cream to dirty yellow, irregularly blotched and spotted

with amber, reddish-brown, and a few purplish gray markings;" the long diameter is about 1.75 (1.74-1.76) of an inch and the cross 1.17 to 1.18.

The birds on or about the nests "were very tame and allowed their nests to be robbed without attempting to attack the intruder." The breeding months are said to "extend from October to January"—that is, from mid-spring to mid-summer of the southern hemisphere. Most of the eggs obtained, however were, found in summer.

THE BIRDS OF THE HAWAIIAN ISLANDS*.

BY LEONARD STEJNEGER.

Scott Wilson and Evans's splendid monograph of the Hawaiian Birds has been finished at last, the concluding parts having recently been published after a lapse of three years, and we must congratulate Mr. Wilson upon having thus brought to a successful issue the task he had set himself when twelve years ago he started out for Hawaii to explore ornithologically one of the most interesting and important archipelagoes existent.

How much the islands needed a thorough exploration is shown by the fact that since 1887 the species of *Passeres* alone, all of which are peculiar to the archipelago, have been nearly doubled, and of the 24 species added since then Scott Wilson is responsible for no less than 12 $\frac{1}{2}$.

Until quite recently the Hawaiian Islands were a *terra incognita* ornithologically speaking. Few of the many scientific expeditions which touched there paid any attention to the birds, and the few specimens which they brought home were gathered mostly at sea level. In the various museums there were deposited specimens belonging to more species than were recognized, it is true, but they remained unrecognized because at no one place the material was sufficient for determining their status. Professor A. Newton was alive to this fact, and to him is primarily due the honor of having been instrumental in sending out Mr. Wilson and later Mr. Perkins, thus collecting in Cambridge the material for sifting and settling the vexed status of most of the passerine forms inhabiting the archipelago.

Before the present writer in 1887 published his first paper on the birds of Kauai (Proc. U. S. Nat. Mus. 1887, p. 75-102), no one had seriously raised the question of representative forms on the various islands. In that paper I repeatedly expressed the belief that it would probably be found that the various species are differentiated into individual island forms, but due to the lack of material for comparison, I failed to bring out the distinctness of the corresponding forms of *Hemignathus obscurus* and *Himatione chloris*

in Kauai, though I clearly indicated my suspicions, and made out a pretty good case for the *Chasiempis*.

The later researches of Mr. Wilson, Mr. Perkins and the collectors of Baron Rothschild have clearly demonstrated the correctness of my theory showing that the Hawaiian archipelago in this respect is hardly behind the Galapagos and the Antilles.

Thus the genera *Chlorodrepanis* and *Oreomyza* are represented in each of the principal six islands by a special form, while *Hemignathus*, *Heterorhynchus*, *Loxops*, *Moho* and *Phacornis* are similarly represented, except in one or two of the smaller intermediate islands, and it is by no means certain that these genera are—or have been—entirely absent in the other islands where we have as yet no record of their presence. The gaps may be filled by future discoveries, but it is unfortunately altogether too probable that most are due to the fact of the species having become exterminated in recent times. In former days man pursued the light colored birds with relentless energy, for their feathers served as payment of the royal taxes and were used in the manufacture of the costly and unique royal robes, helmets and "leis". This practice undoubtedly brought to a low ebb, if not actual extermination, the magnificent *Drepanis pacifica* of Hawaii as well as *Moho apicalis* of Oahu, and if *Drepanis* had other representative forms, except *D. funerea* whose dull colors probably saved it, in the other islands, they may have vanished entirely. The cattle introduced by white men since the discovery of the archipelago in the last century are responsible for a wholesale destruction of the native forests, a fact which is believed to have caused the disappearances of many species of birds. Thus on Oahu, out of eleven known species of *Passeres* no less than six are considered to be extinct or nearly so, and who shall say how many more. Foreign destructive birds have also been introduced; the English sparrow and the Chinese myna have undoubtedly their share in the de-

*Aves Hawaiienses: The Birds of the Sandwich Islands. By Scott B. Wilson, F. Z. S., F. R. G. S., assisted by A. H. Evans, M. A., F. Z. S.—London: R. H. Porter, 7 Princes Street, Cavendish Square, W., 1890-99.—4o, xxvii, 257 pp. 70 plates and 1 map.

¹Excluding the small islets to the northwest.

²Two of these, viz: *Hemignathus procerus* and *Chlorodrepanis stejnegeri*, the present writer had already recorded doubtfully under the names of species previously reported because of lack of material for comparison, but their specific distinctiveness was strongly hinted at (Proc. U. S. Nat. Mus., 1887, p. 93 and p. 96).

while the two others, *Moho* and *Chaloptila* belong to the *Meliphagidae*.

In this connection it is interesting to note that the only indigenous mammal of the islands is a member of an American genus, viz. *Lasiurus scmolus* a bat which belongs to the same category as the coot and the gallinule rather than to that of the Drepanidine birds.

Mr. Scott Wilson has included in his book two very important and interesting papers by Dr. H. Gadow bearing on the systematic position and origin of the various Passeres peculiar to the islands, and based upon alcoholic specimens collected by Mr. Wilson. The first one was published in part ii, September 1891. In this paper Dr. Gadow took the stand that the Drepanidine genera belonged to two families, referring as he did the thick-billed forms to the *Fringillidae* proper. The present writer has always held that no matter what the ultimate origin of the group may have been, the thin-billed and thick-billed genera are intimately related forming as they do an almost unbroken series from the sickle-billed *Drepanis* to the hawfinch-billed *Rhodacanthis*. This is probably the most extreme variation in rostral structure in any one family, nevertheless the similarity of these birds in all other respects is so close as to preclude a dual origin. It is therefore highly gratifying to find that Dr. Gadow, in the second paper, published June 1899, (part vii.) after an examination of more material, comes to the opposite conclusion of his first paper, and now freely concedes the unity of the group. Curiously enough he was led to the reopening of the case chiefly by Mr. Perkins' persistently expressed opinion that Dr. Gadow's former view was wrong, an opinion gained from his experience in the field with reference to the habits of these birds and particularly their *strong and disagreeable scent*. Dr. Gadow's further conclusions that the Drepanidine birds form a specialized group confined to the Hawaiian archipelago belonging to the Fringilliform aggregation and most nearly related to the *Cercobidae* may be accepted as correct.

Of the book before us it remains only to be said that in general style and execution it conforms to that of the modern English quarto monographs with colored plates. The latter are

by Mr. Frohawk, and are certainly the best we have seen from that gentleman's pencil. The later plates are particularly good and show a marked improvement over his earlier work. 85 species are described as constituting the avifauna of Hawaii proper, 62 of which are figured. Three plates are devoted to nests and eggs, three to the anatomical structure of Hawaiian birds, and one represents a map of the archipelago.

It is a matter of congratulation that the majority of Hawaiian birds have been described in recent years so that there is but little room for quarrels over nomenclature. It is dubious, however, whether under the Stricklandian code it is imperatively demanded to set aside *Moho* for *Aerulocercus* simply because the former was proposed as a subgeneric term. Under the American O. U. Code *Moho* will certainly have to be retained and *Lovops ochracea* must take the precedence over *Lovops aurea* since Dr. Finsch in employing the latter specific name expressly intended to use the term given by Mr. Dole, which we now know belongs to another bird. Under the same code *Fringilla rufa* of Bloxham (1826) must give way to *Fringilla rufa* of Wilson (1811) and must henceforth be known as *Lovops wolstenholmi* Rothschild. These points are merely questions of nomenclatorial rules. But we must dissent from another of Mr. Wilson's names on the ground of identification. He calls the Hawaiian crow *Corvus tropicus* Latham and believes that this name was based upon a part albino. But a glance at Latham's description will show that this view is quite untenable. Latham (Gen. Synops. I, i, 1781, p. 384) describes a bird twelve inches and a half long, with a bill an inch and a quarter, the tips of both mandibles notched; the plumage is glossy black above, and the wings and tail are black with a gloss of green; the vent and side feathers tipped with dusky white. Now, Mr. Wilson himself describes the Hawaiian crow as 19 inches long with a bill 2½ inches long; the entire plumage as dusky brown, and the quills of the wings as rusty brown. It will be seen that he and Latham are describing two entirely different birds, notwithstanding the fact that Latham gives Hawaii as the habitat of his *Corvus tropicus*. The Hawaiian crow must stand as *Corvus hawaiiensis* Peale.



OTHNIEL CHARLES MARSH.

OTHNIEL CHARLES MARSH AS AN ORNITHOLOGIST.

BY CHARLES E. BEECHER, New Haven.

Few persons at first thought would associate the name of Professor Marsh with the science of Ornithology, yet some of his most brilliant work was done in this field of research, and in some regards he may be ranked as the Catesby of American Paleontology. His first great discovery, and in many respects his most notable one, was the fact that primitive birds possessed well-defined teeth. No other discovery is so wholly his, and none of his later finds, however marvellous, could have at once demanded and received the attention awarded to this.

Marsh took up the study of American fossil birds almost at the beginning of his career as a vertebrate paleontologist. His earliest paper in this line of research was published in 1870. In it were described five species from the Cretace-

ous of New Jersey, and four Tertiary birds from Maryland, North Carolina, Nebraska and Idaho. This communication was followed by other papers at frequent intervals down to 1877, the series culminating in the publication of his famous monograph on the Odontornithes, or Toothed birds, in 1880. Subsequent to this date, researches in this line were less important and more infrequent, owing chiefly to the apparent exhaustion of the field, but partly to the overwhelming amount of material he had secured, representing the fossil reptiles and mammals of the Rocky Mountain region.

The steps leading to the announcement of birds with teeth are interesting. *Hesperornis regalis* was described in May, 1872, and *Ichthyornis dispar* in September of the same year, but

because of the incompleteness of these remains, their dentiferous character was unsuspected. Later, in November, Marsh described, under the name *Colonosaurus Mudgei*, what he considered as a small saurian differing "widely from any hitherto discovered". The description was based upon two lower jaws containing numerous small teeth in sockets. Subsequent removal of the matrix revealed the fact that the bird *Ichthyornis* and the saurian *Colonosaurus* were one! Thus a great barrier between birds and reptiles was removed, and a recasting of the avian definition was made necessary.

In reviewing all the North American species of fossil birds, Marsh's share in rehabilitating the ancient bird life of the continent becomes easily apparent. There are fifty fossil species known from the Quaternary, Tertiary, Cretaceous, and Jurassic, of which forty-two may be attributed to him. Of the twenty-six Quaternary and Tertiary species, eighteen are his. This leaves twenty-three Cretaceous species all his, as well as the sole bird from the Jurassic. The Quaternary and Tertiary species include one of the Picariæ (woodpeckers), two Raptores (birds of prey), three Gallinæ (fowls), seven Alcecorides (cranes), one of the Steganopodes (totipalmate birds), one of the Longipennes (long-winged swimmers), two Pygopodes (diving birds), and one of the Ratitæ (running birds). The Cretaceous and Jurassic species are all referred to the subclass Odontornithes or toothed birds.

Had the supply of fossil birds held out, these forms would undoubtedly have almost claimed Marsh's undivided attention. His enthusiasm over a fossil bird bone was even greater than that for the more complete remains of gigantic monsters belonging to the Reptilia and Mammalia. He often said that, during his early studies, the dissection of a bird at table frequently led him to pocket the bones for purposes of post-prandial study.

A list of Marsh's species of fossil birds, together with a reference to their geological position, year of publication, and locality, is herewith appended. A complete list of his publications comprises two hundred and thirty-seven titles, of which thirty-nine relate more or less to birds, and are also appended to this sketch.

Othniel Charles Marsh was born near Lockport, N. Y., October 29, 1831. The region about Lockport was already famous for an abundance of minerals and fossils, and Marsh, having natural scientific tastes, early acquired the love of outdoor study and the absorbing enthusiasm of a collector. He prepared for his higher education at Andover, Mass., and entered Yale College in 1856. He was graduated in 1860, with the degree of Bachelor of Arts. Special courses in science were pursued in the Sheffield Scientific School during the two following years. Then from 1862 to 1865, he studied abroad at the universities of Berlin, Heidelberg and Breslau.

In 1866, he formed his first official connection with Yale College, having received the appointment of Professor of Paleontology. This chair he held uninterruptedly to the time of his death. Through his uncle, Mr. George Peabody, he had received his educational advantages and a sub-

stantial fortune. The latter enabled him to project plans of work on a generous scale, and to carry on extensive expeditions in quest of material.

He planned and organized the Yale Scientific Expeditions, which, during the field seasons of 1870, '71, '72 and '73, explored new and little known regions in the west, mainly in the Rocky Mountain region. At that time, these undertakings were almost of as great magnitude as similar expeditions to Central Africa would be to-day. In scientific results, they were even more fruitful than most African scientific explorations have been. From the tons of material thus acquired, Marsh brought out many new and important types of vertebrate life, including the birds with teeth, the first American pterodactyls, the gigantic Dinocerata of the Eocene, the ancestors of the horse, the huge Brontotheriæ, and others of almost equal note.

The subsequent accumulation of material from the West was continued under increasingly favorable conditions, owing to the rapid settlement and development of the country, and in 1883 Professor Marsh undertook for the United States Geological Survey what he had before accomplished alone; namely, the collection and description of the vertebrate riches of this country. As Vertebrate Paleontologist to the Survey, he carried on extensive researches, and planned the publication of a series of monographs on various groups of extinct vertebrates. Much preliminary work on these memoirs has been completed, but the volume on the Dinocerata, issued in 1886, is the only published monograph prepared for the Survey. The other finished monograph is that on the Odontornithes, for which no government aid was furnished except its publication in 1880, by the United States Geological Exploration of the Fortieth Parallel.

In no other way was Professor Marsh's tireless energy so well displayed as in the accumulation of collections. Commencing in early youth, there was no cessation of his industry as a collector, and the mass of material stored in the Yale University Museum is his greatest scientific monument. Not only did he gather about him all he possibly could to represent his immediate field of research, but he worked equally hard to secure material for all the departments of the museum.

His collections were formally presented to Yale University, January 1, 1898. They were described in his letter of presentation under the heads (1) Vertebrate Fossils; (2) Fossil Footprints; (3) Invertebrate Fossils; (4) Recent Osteology; (5) American Archeology and Ethnology, and (6) Minerals. Besides these, there were others representing fossil plants, casts of fossils, geological specimens, and recent zoological material.

About the middle of his sixty-eighth year, while working with undiminished vigor and making further extensive additions to his collections, he was seized with an attack of pneumonia that resulted fatally after an illness of about a week. His death occurred on March 18, 1899. The world will long remember him for his brilliant investigations in natural science, and for the wealth of scientific material with which he endowed the Yale University Museum.

LIST OF FOSSIL BIRDS DESCRIBED BY O. C. MARSH,
WITH A REFERENCE TO THEIR GEOLOGICAL
POSITION, THE YEAR OF PUBLICATION
AND LOCALITY.

The few changes in generic reference made in this list are in accordance with the fourth edition of Coues's "Key to North American Birds".

JURASSIC BIRDS.

1. *Laopteryx priscus*, 1881, Wyoming.

CRETACEOUS BIRDS.

2. *Apatornis celer*, 1873, Kansas.
3. *Baptornis advenus*, 1877, Kansas.
4. *Cimolopteryx rarus*, 1889, Wyoming.
5. *Cimolopteryx retusus*, 1892, Wyoming.
6. *Comionis altus*, 1893, Montana.
7. *Graculavus velox*, 1872, New Jersey.
8. *Graculavus pumilus*, 1872, New Jersey.
9. *Herperornis regalis*, 1872, Kansas.
10. *Hesperornis crassipes*, 1876, Kansas.
11. *Hesperornis gracilis*, 1876, Kansas.
12. *Ichthyornis dispar*, 1872, Kansas.
13. *Ichthyornis agilis*, 1873, Kansas.
14. *Ichthyornis anceps*, 1872, Kansas.
15. *Ichthyornis lentus*, 1877, Texas.
16. *Ichthyornis tener*, 1880, Kansas.
17. *Ichthyornis validus*, 1880, Kansas.
18. *Ichthyornis victor*, 1876, Kansas.
19. *Laornis Edwardsianus*, 1870, New Jersey.
20. *Palaeotringa littoralis*, 1870, New Jersey.
21. *Palaeotringa vagans*, 1872, New Jersey.
22. *Palaeotringa vetus*, 1870, New Jersey.
23. *Telmatornis priscus*, 1870, New Jersey.
24. *Telmatornis affinis*, 1870, New Jersey.

TERTIARY BIRDS.

25. *Aletornis nobilis*, 1872, Wyoming.
26. *Aletornis bellus*, 1872, Wyoming.
27. *Aletornis gracilis*, 1872, Wyoming.
28. *Aletornis pernix*, 1872, Wyoming.
29. *Aletornis venustus*, 1872, Wyoming.
30. *Aquila Danana*, 1871, Nebraska.
31. *Barornis regens*, 1894, New Jersey.
32. *Bubo leptostens*, 1871, Wyoming.
33. *Grus Haydeni*, 1870, Nebraska.
34. *Lomyia antiqua*, 1870, North Carolina.
35. *Meleagris antiquus*, 1871, Colorado.
36. *Phalacrocorax idahensis*, 1870, Idaho.
37. *Puffinus Conradi*, 1870, Maryland.
38. *Uintornis lucaris*, 1872, Wyoming.

QUATERNARY BIRDS.

39. *Grus proavus*, 1872, New Jersey.
40. *Lomyia affinis*, 1872, Maine.
41. *Meleagris altus*, 1870, New Jersey.
42. *Meleagris celer*, 1871, New Jersey.

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1871. Notice of some new Fossil Mammals and Birds from the Tertiary Formation of the West. *Ibid.* (3), vol. 2, pp. 120-127.
1872. Discovery of a remarkable Fossil Bird. *Ibid.*, vol. 3, pp. 56-57.
Preliminary Description of *Hesperornis regalis*, with notices of four other new species of Cretaceous Birds. *Ibid.*, pp. 360-365.
Notice of some new Tertiary and Post Tertiary Birds. *Ibid.*, vol. 4, pp. 256-262.
Notice of a new and remarkable Fossil Bird. *Ibid.*, p. 344.
Notice of a new Reptile from the Cretaceous. *Ibid.*, p. 406.
Synopsis of American Fossil Birds. Coues's "Key to North American Birds", Salem, 8°, pp. 347-350.
1873. Notice of new a species of *Ichthyornis*. *Amer. Jour. Sci.* (3), vol. 5, p. 74.
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Comments.

THE NEW YEAR.

Another year has passed and we enter into a new one with excellent prospects for the OSPREY. The magazine has appeared since the commencement of the new volume quite or nearly on time—the fifteenth of each month—and this regularity, so far as we can foresee, will be ob-

served for the future. We have been favored with many contributions for succeeding numbers and for these we are glad to express our hearty thanks. We trust that these contributions will be the forerunners of others of equal value. The success of the magazine must depend on contributors as well as subscribers and we hope that both will help us as much as lies in their power. The number of subscribers has materially increased since the present management has assumed control but the expenses are still greater than the income. Nevertheless we will in any case continue it till the fifth volume shall be completed. We hope and confidently expect that before that time the magazine will be on a good paying basis. Surely a monthly magazine devoted to ornithology should have a place in the world.

Two of the features presented in the introduction and postscript to the last volume are commenced in the present number.

Dr. Stejneger has given the most prominent and characteristic features of the Bird fauna of the Hawaiian Islands in the form of a review of the recently completed "Aves Hawaiienses: The Birds of the Sandwich Islands" of Mr. Scott B. Wilson.

Mr. Bartsch has commenced his series of articles on the Birds of the Road and noticed those that he has actually seen in trips about Washington during the months of December and January. This article will be followed, we hope, by others giving the experience of that gentleman for each month of the year.

THE ORIGIN OF THE HAWAIIAN FAUNA.

The important review of the Birds of the Hawaiian Islands in the present number of the *OSPREY* re-opens the question of the Origin of the Hawaiian Fauna. This is by no means the simple question it might appear to be at first; it is indeed a complicated one and consideration of different classes gives diverse results. Even the evidence from the several classes of vertebrates is conflicting. But when we proceed to a review of the invertebrate and especially the terrestrial gastropodous fauna we are confronted by some remarkable facts.

The birds, as Dr. Stejneger, and before him Professor Newton, has shown, do not belong to the 'Australian region' of faunists. "The relationship of the birds to those of Polynesia is very slim. Apart from the migratory birds visiting the archipelago in winter, mostly from Alaska, the remainder of the Avifauna is overwhelmingly American."

The mammals are only represented by a single volant species, a bat of the genus *Lasiurus* and nearly related to the common Red and Hoary Bats (*Lasiurus borealis* and *cincereus*) of the United States. It is, however a distinct species, *Lasiurus semolus*—*Atalapha semota* of True and Harrison Allen. As the genus is otherwise restricted to America the Hawaiian species must be a derivative from American outcasts or wanderers.

The reptiles are of moment only in showing how such animals may have their range extended and that the fauna, so far as they are concerned, is of recent origin or rather introduction. Lizards are the only representatives of the class existent there. Dr. Stejneger has worked these up quite recently and published his results in the Proceedings of the United States National Museum (1898, 783-813). There are seven species, four of the Gecko family, and three of the Skink family. One of these—the Hawaiian Gecko, *Hemiphyllodactylus leucostictus*—is regarded by Dr. Stejneger as a strictly Hawaiian species, and at least it has not been found elsewhere. All the others, however, as Dr. Stejneger has recognized, "belong to species widely distributed over the Indo-Polynesian Island world". The supposed peculiar species, he adds, "has close relatives in New Caledonia, Java, Sumatra, and Ceylon"; in other terms, its slight differentiation indicates recent divergence from its relatives.

No amphibians have obtained a foothold in the islands.

The fishes of the sea are mostly shared in common with the numerous islands of the Pacific and many range far eastward; those of the fresh waters, such as a *Kuhlia*, a Goby, and a *Sicydium*, are of recent marine origin or simply excursionists from the sea. They also have no tale to tell.

The Mollusks will be noticed in a future number.

THE LARGEST BIRD.

We are somewhat inclined to call in question Mr. Harting's statement, in the opening sentence of his article on the Largest Bird that Flies, that "If the subject of the inquiry were the largest bird that ever lived there can be little doubt that the palm would have to be awarded to the extinct New Zealand Moa (*Dinornis maximus*) of which the total height was about 10 feet, the tibia or thigh bone (*sic*) measuring a yard in length". If by largest is meant the tallest this is very possibly correct, although *Epyornis ingens* would be a formidable rival, but if by largest is meant bulkiest, or heaviest, *Dinornis* would probably be forced to yield the palm to *Epyornis* and this in turn to one of the gigantic extinct birds of Patagonia, such as *Phororhacos longissimus* or *Bronlorornis*. *Dinornis*, as indicated by its skeleton, was a "leggy", long-necked bird, not especially heavy for its height, although far exceeding the Ostrich in this respect. *Epyornis* on the other hand was heavily built while *Bronlorornis* was probably the most massive bird known, the metatarsus, although but 16 inches long, measuring 5 inches across the head and 3 inches across the center of the shaft, being much heavier than the *tibia* of the famous racehorse Lexington. The corresponding bone in a large *Dinornis*, while 18 inches long, is but 3½ inches in the widest part and but 2 inches across the centre of the shaft. The length of this tarsus is approached by that of *Epyornis ingens*, whose tarsus is 16 inches long and much stouter than that of *Dinornis*, indicating a much heavier bird, and possibly "the largest bird that ever lived".—F. A. L.

CORRECTION.

We have been requested to make a correction of a typographical error which occurred in Mr. Ernest Seton Thompson's "Notes for Observation of Habits of Birds" published in the September Number, (p. 6). The date of publication of the original draft was given as 1898; it should have been 1888 and was so corrected in the proof but the correction was not attended to by the printers. We regret the error and ask Mr. Seton Thompson's pardon.

Letters.

THE FIRST RECORD OF *Turdus swainsoni* IN RUSSIA. BY NIK. VON SSOMOW.

UTICA, N. Y., Nov. 6, 1899.

EDITORS OF THE OSPREY:

The inaccessibile Tschusi zu Schmidhoffen's Ornithologisches Jahrbuch, 1896, Heft. 2, p. 79-80, is reported to have an article entitled "*Turdus swainsoni* in Russland".

I would like to know about this species—the Olive-backed Thrush—in Russia. Perhaps a note on this subject might interest others as well.

Respectfully,

E. D. DOWNER.

[We take pleasure in complying with Mr. Downer's request, as we consider the article in question of interest to all readers of the OSPREY. We publish it in the form of a translation by our Mr. Bartsch.—EDITORS].

On the 10th day of November, 1893, N st. [new style], one of my friends, Mr. Tscherniechin, shot a small thrush in the garden of his villa in the vicinity of the city of Charkow, which he at first considered a dwarf Song Thrush. However, as he was uncertain about it, he sent the skin of the bird to me. The same proved to be

a Swainson's Thrush, *Turdus swainsoni* Cab. (Seebohm, Cat Birds Brit. Mus., V, pp. 185 and 201), having the cheeks and throat suffused with pale rust yellow, but apparently it is not a specimen of var. *aliciae* (Baird), as this appears to be larger. It would be better to consider this an intermediate form. The coloration, wing formula, and measurements are the same as in Seebohm (l. c.) and Gätke (Vogelw. Helgol., p. 251-252).

The markings of the under side of the wing deserve mention in this specimen. Beginning with the fourth primary, all the other flight feathers bear on the basal half of the inner vane a long, sharply defined isabella-colored spot. The base of each wing feather, as well as the narrow band which separates the light spot from the shaft, are brown. Taken together these spots form a light oblique band—similar, as far as character of markings inclusive of the wing coverts is concerned, to Seebohm's figure of the wing of *Geocichla varia* (l. c. p. 147). Such oblique bands on the under side of the wings are also found in other true thrushes, but are more defined here.

Al. 96 mm., caud. 67 mm., tars. 27 mm., culm. 16 mm.

B.

Notes.

CLASSICAL ENGLISH POEMS ABOUT BIRDS have been selected recently, and the choice is of interest. Professor Wallace Wood, of Columbia University, asked Professor Edward Dowden to name ten of the greatest little classics in poetical literature, and from nine other critics he asked for and received a larger selection. The results of answers were turned over to the *New York Herald*, and are published in the issue for Sunday, December 10. The poem which received the greatest number of votes (8) was Keat's "Ode to a Nightingale"; the next in favor was Shelley's "Ode to a Skylark", which had 6 votes, as had also Coleridge's "Ancient Mariner". Mr. Richard Garnett, Librarian of the British Museum, added to the odes to birds Bryant's "Lines to a Waterfowl", and John H. Ingram supplemented Browning's "The Swan's nest", and Poe's "The Raven". Marlowe's "Come with me and be my Love", familiar to all Waltonians, received two votes.

THE SALE OF ORNITHOLOGICAL WORKS has been very large for some time past. Miss Lockwood, the Secretary of the Audubon Society, is quoted, in the *Sun* for December 31, as saying that "within the last five years, New York and Boston publishers alone have sold more than 70,000 books on ornithology for the use of young students". No further details are given, however.

THE REVIVAL OF FALCONRY is treated of in the *Spectator* for December 16. It is remarked that at Valkenswaard Heath [in the Netherlands] during the autumn migration of this year, the

Dutch hawk catchers were unable to take enough falcons to meet the orders of their English and French patrons". The increased interest of late in Falconry and its utility or rather effectiveness are commented on. "It is no exaggeration to say that the owner of a modest property of five hundred or six hundred acres could take as much game on it with a single Goshawk as he could kill with a gun".

HAWKS ARE PROPERTY in England to a certain extent. According to the *Spectator*, "they have now two recent legal decisions in their favor, by which they can claim the same right of protection that the trained carrier pigeon does. In two instances when trained hawks have been shot by persons who had good reason to know that they were private property, the shooter had to pay heavily for the value of the bird, which, though wild, has the *animus revertendi*, or desire of returning to its owner, and thus renounces its wild nature by a voluntary act".

THE PRESENT PRICE OF A TRAINED HAWK is about three to four pounds—15 to 20 dollars. A very well trained one "is now valued at ten pounds, so they are still one-third of the price they were three hundred years ago". In the times of James I. of England—nearly three centuries ago—a good Goshawk was sold for 30 pounds".

EXPLORATION OF THE WEST INDIES is now in order. Two collecting parties from the U. S. National Museum are expected to leave Wash-

ington for different islands late in January, to be gone four or five months. One party, consisting of Messrs. William Palmer and J. H. Riley, will direct its energies to the exploration of Cuba, and possibly the Isle of Pines. Drs. L. Stejneger and Chas. W. Richmond, who make up the other party, will go to Puerto Rico and some of the Lesser Antilles. Collections of various objects will be made, and as the members of the parties are all especially interested in ornithology, and three co-editors of the *OSPREY*, it is to be expected that the birds will not be wholly neglected. We expect to give summaries of the results some time next summer.

THE EGG COLLECTOR, we are requested to announce, will be soon issued as "the Quarterly Official Organ Oölogists' Association," with John W. Daniel, jr., as editor-in-chief.

THE MARRIAGE of Miss FLORENCE MERRIAM to Mr. Vernon Bailey will doubtless be interesting news to many readers of the *OSPREY* and admirers of Miss Merriam's works.

The marriage was solemnized in Washington, December, 1899.

THE SUIT AGAINST THE MARSH WILL instituted by a nephew of the deceased scientist, we are pleased to learn, has been decided in favor of the will. Yale University will therefore enjoy the benefits of the benefaction so long intended by the testator, although to a much less extent than was expected.

THE DEATH OF W. W. COLBURN occurred at his residence, Springfield, Mass., October 17, 1899. He had been a teacher and principal in several private schools, but since his retirement

from the principalship of the High School at Manchester, N. H., he received private pupils, and gave instruction in natural history. He was a co-author, with Mr. Robert O. Morris, of a catalogue of the wild birds of Forest Park, Springfield. He was 60 years old.

THE DEATH OF DR. ARTHUR EWELL STARK is a loss to ornithology consequent on the war between the Boers and British. Dr. Stark was a volunteer on the Medical Staff of the British Army and "sent up to Ladysmith by the last train that passed the Boer Army. Standing at the door of the Royal Hotel in Ladysmith, on November 18, he was struck by an exploded shell, and died shortly afterwards". He was especially interested in the ornithology of South Africa and had just completed and made ready for publication the first volume of a work on the birds of that region, which was to form an instalment of the "Fauna of South Africa" edited by Mr. W. L. Sclater, heretofore referred to in the *OSPREY* (for October p. —). It is to be feared that the continuation of the work may be indefinitely delayed until another hand can be found to complete it.

THE DEATH OF DR. ELLIOTT COUES must not be left unnoticed in the first issue of the *OSPREY* published since the lamentable event, but a detailed account of the eminent ornithologist will be reserved for a future occasion. Dr. Coues had suffered for some time from a complication of diseases, and had to undergo two surgical operations for distinct disorders within a month of each other. He succumbed from exhaustion the second day after the later operation, and died on Christmas day; he was 57 years old, having been born September 9, 1842.

Literature.

ON THE BIRDS' HIGHWAY. By Reginald Heber Howe, Jr. With Photographic Illustrations by the Author and a Frontispiece in Color from a Painting by Louis Agassiz Fuertes. —Boston. Small, Maynard & Company. 1899. [12mo., 175 p., front.] A lovely little volume, elegantly bound, containing 175 pages of interesting text illumined by many illustrations. The reader on opening the book is at once greeted by a color reproduction of a painting from the hand of Louis Agassiz Fuertes representing "Our Friends the Chickadees", in their winter quarters. It is a splendid picture and arouses an interest in the what's to come, which the author maintains throughout its pages.

The book is divided into 14 chapters as follows: I. "Winter Birds." II. "December by Land and Sea"—a Rhode Island sketch. III. "On the Land at Ipswich." IV. "Among the Foothills"—a trip to Shelburn, N. H. V. "Where February is Spring"—the most interesting chapter to Washingtonians as it speaks of the birds of our best field, the Zoological Park on Rock Creek. VI. "Familiar and Unfamiliar Bird Songs"—a delightful chapter too well designated

to need farther explanation. VII. "In the Mount Hope Lands". VIII. "Under the Shadow of Wachusett". IX. "A Meadow Chronicle"—a July day with Song Sparrows, Kingbirds, Goldfinches, Chippies, Orioles and the like. X. "The Swallow Pond"—a bit of land, the favorite spot of the author. XI. "In the Land of Norumbega"—a visit to Islesborough in the Penobscot. XII. "Summer Birds". XIII. "Along the Beach"—a tramp on Martha's Vineyard, and the final chapter "Late Summer in the Adirondacks". This is followed by an appendix containing lists of birds from the localities treated in the body of the book and a general index.

Birds are the prominent characters of the work. The author takes us on his rambles and presents to us the scenes and haunts among which they occur; introducing us to their traits and habits in a most pleasing manner.

Some of the 59 illustrations are not as clear and sharp cut as we would have them, but birds are difficult subjects for the camera and we congratulate the author on the volume as a whole. It is a thing of beauty and we are certain the reader will find it a joy forever.

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Original Articles.

BIRDS OF THE ROAD.

By PAUL BARTSCH, Washington, D. C.

2. JANUARY—FEBRUARY.

Since my last notes in the *OSPREY* we have had real Washington winter weather. I say Washington winter weather because the Metropolis seems to have a climate peculiarly its own. One day bright and cheery as if promising the return of the fair days on December followed mockingly the next, by ice and snow and a blast which makes one wish for Eskimo robes. Washington weather is very uncertain, and you can no more rely upon the signs of nature, than the weather map itself, as to what tomorrow will be.

I have certainly felt sorry for the poor birds this month—and yet they are much better off than they were a year ago, when the blizzard held us all confined. Then many of our winter visitors came to the city, to feed upon the refuse matter in the streets. Continual snow-fall had buried the tops of the weeds, and stored their food beyond reach.

I remember taking a trip on February 12, intending to visit Soldiers' Home, swing over to Benning, thence down to Anacostia. I started across country, from Le Droit Park, wading through about 18 inches of snow. It seemed a delightful pastime to plough through the little packed mantle of fleecy flakes. Before I had covered the first half mile, I began to be less enthusiastic, the more so, since many of the birds which I had expected, (northern visitors, forced south by the severe cold) were nowhere apparent. After crossing First street, continuing in the direction of Prospect Hill Cemetery, I decided to shorten the course, by leaving Soldiers' Home to the left and making a straight line towards Benning. I followed the new cut which was being made to extend North Capitol street to the Home, and found I was quite willing to rest on an old wagon which I bared from snow, by forcible contact after sliding down an embankment, hidden by a drift. This was at the southern end of the cut. I had been working very hard trying to get to where I might see rare winter visitors and was quite ex-

hausted. While seated here allowing my pulse to come some where near its normal, I heard a faint peep—peep—peep, the welcome note of a northern friend, the Horned Lark. Looking about, I soon discovered him in his wavy flight. He alighted on a nearby hill-side, and my glasses showed him busily working the few tops of the few bunches of weeds which were tall enough to keep their heads above the snow. The poor fellow was hungry, and seemed to be half frozen. He appeared to have a hard time gleaning the little seeds from their capsules. While seated here I also noted several Snow-birds coming from the evergreens of the cemetery, flying across the cut. They too appeared to be suffering from cold and hunger, as did some Tree Sparrows which were in their company. These were hard times for the birds, particularly those which winter here every year and are not accustomed to be placed in such straits. I remember how sad it all appeared. There was little gladness in their little bodies that day. A Downy however, was the exception and the only one. He joined the band of Juncos and Tree Sparrows, but was unable to call any more satisfaction from them by his encouraging notes than the mere whimpering under-tone conversation, every note of which seemed to speak of hunger and cold. This is not all these little feathered bodies are exposed to, for while I was here a swift winged Cooper's Hawk sallied amongst them but failed, thanks to the writer, to carry off any member of that little band, just then. He also was hungry.

I finally made my way to Lincoln avenue and returned to the city abandoning the original plan. The birds too had come to the city, for at the intersection of Florida avenue and North Capitol street, I met a flock of Horned Larks contesting with the English Sparrows, for the droppings in the street. They appeared to be tumbling rather than walking. Hunger and cold had made them so fearless, that I was able to approach them almost close enough to touch them with my feet.

The blizzard which followed, February 13, was hard on the English Sparrow. The day after, while walking to office down Seventh



THE ENGLISH SPARROW.

street, I saw ten times more men shoveling snow, than Sparrows. Great numbers must have perished that day. But who would think so now? Our streets, our lawns, our parks, our gardens, yea, our very houses are again tenanted by them. They are the most abundant bird of this season and I wish I might devote a lengthy chapter on their habits. For although they have been called by every evil name that in anyway might be synonymous with good-for-nothingness, they nevertheless appeal to me as interesting as, if not more so than many of our native birds.

They have roosts, basking places and homes proper. The roosts at Washington are usually in the ivy and creepers which beautifully cover many of the buildings and furnish a dense retreat for the protection of our birds from winds, colds and enemies. The basking places are interesting. I know of two. One is a bush in front of the United States National Museum, in the corner where the winding road turns toward Ninth street. Here one is sure to find a goodly company assembled in early morning, when the sun is getting up, basking in his rays. Another is not far from this place. It is a shrub on the west side of the walk, leading north from the Smithsonian about half way between the first and second cross-roads. Here, very likely the same crowd mounts the twigs to bid Old Sol farewell at eve.

I have been very much interested in their household affairs ever since I came to Washington. I think the English Sparrow was the first acquaintance to greet me upon my arrival and I suppose this accounts for my having an occasional word in his favor. I remember entering the Smithsonian grounds by way of Seventh street that day, the day I reported for duty, and at its very entrance above the little guard-house,

in plain view, was a bulky, large nest. What might it be? I had never seen one like it. There were plenty of Sparrows about, but I had never known an English Sparrow to weave a nest in the branches of a tree. The owner, however, soon laid claim to it, and great was my surprise to see that it did belong to *Passer domesticus*. I have seen many similarly constructed, but not this year; the decrease by the blizzard seems not to have been completely made up as yet, and there appear to be enough holes for occupation. For I believe Mr. Passer only resorts to the building of a house when there are none to let. There is no telling where he will not take up his abode. You may find it from a knot-hole which gives him entrance to the space between the weather-boarding and plaster of a dwelling, to cavities in trees and other places, and as a last resort he will build a cradle among the branches themselves.

He has doubtless come to stay and will outlast all of our native birds, among which I know none so plastic, adaptive and prolific as our English Sparrow. His enemies too, are few, very few—only twice have I seen small Hawks give them chase in the Smithsonian grounds. Once it was the Sharp Shinned, the other time a Pigeon Hawk. His greatest enemy here is the little Screech Owl. One of our neighbors told me that a little Owl had taken up her abode



THE SCREECH OWL (*Megascops asio*).

in his chestnut tree, and that she must have raised sad havoc with the Sparrows, for they have all left his place. I heard a great commotion in one of our cedars the other night; it is a favorite roosting of our Sparrows, and earlier in the season also for Juncos. I looked closely—it was a bright moonlight night—and beheld the shadow-like form of *Megascops asio* glide softly away. He had evidently exhausted our neighbor's supply, and found a new full larder.

Another never-failing bird supply for study at this season are the Crows, long streams of which can be seen every evening flying to their roosting station in Virginia. It is interesting to note with what accuracy they follow the instructions of their leader, turning here or there, just as the bunch ahead of them has done. Most interesting are the antics in which they indulge, when they visit the feeding grounds in the morning.

A bunch will come to a certain place in the river, mount high in the air, perform, it would seem, every possible feat of wing, before they all set to, to gain their breakfast. These are hard times, for just think, to be forced to wade out into ice cold water in quest of almost anything alive or dead, that will furnish a bit of food. I have watched them flying over the water, every now and then dipping down for some morsel, wetting the tips of their wings, bill and the feet as they pick it up, almost sitting down upon the waves. These are feats of the Fish Crow. The larger member is content to stalk about the mud laid bare by the retreating tide. But the river is frozen now, and they have to resort to other food supplies. A strange one is furnished by *Polonia imperialis* whose fruit capsules I have noticed them rifleing for several days.

ESTHETIC BIRDS:

THE HUT AND THE GARDEN OF THE GARDENER BIRD OF NEW GUINEA.

AFTER ODOARDO BECCARI.

EDITORIAL NOTE.

The hut and the garden of the Gardiner Bird of New Guinea. After Odoardo Beccari.

The esthetic sense more or less developed in all the Bower Birds, is manifest to the greatest extent, among those known, in the *Amblyornis inornata* of New Guinea. This bird has received from the Natives of the region in which it is found, among others, the designation of Tukan Robon which is translated as the Gardener. The attention of the Italian traveller and naturalist, Signor Odoardo Beccari, was attracted to this bird by the repeated accounts of the Natives when in New Guinea, and in 1877 he communicated an interesting record of his observations to the *Annali of the Civic Museum of Genoa* (Le capanne et i giardini dell' *Amblyornis inornata* in *Annali Mus. Civ. Genova*, 1877, p. 382-400). The part specifically relating to the bird was translated for the *Gardeners' Chronicle* of London (n. s., vol. 9, p. 332-333) and we have availed ourselves of this translation with a few trifling rectifications.

THE BIRD.

"The *Amblyornis inornata*—or, as I propose to name it, the Bird-gardener—is a Bird of Paradise of the dimensions of a turtle-dove. The specific name 'inornata' well suggests its very simple dress. It has none of the ornaments common to the members of its family, its feathers being of several shades of brown, and showing no sexual differences.

"It was shot some years ago by the hunters of Mynheer von Rosen. The first descriptions of its powers of building (the constructions were called 'nests') were given by the hunters of Mynheer Bruijn. They endeavoured to bring one of the nests to Ternate, but it was found impossible to do this, both by reason of its great size and the difficulty of transporting it.

"I have fortunately been able to examine these constructions at remote places where they are

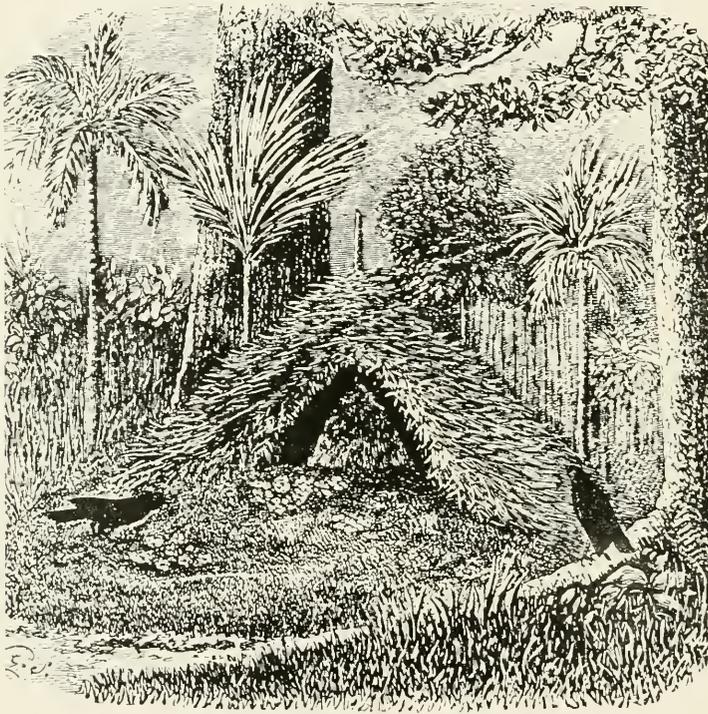
erected. On June 20, 1875, I left Andai for Hatam, on Mount Arfak. I had been forced to stay a day at Warmendi to give rest to my porters. At this time only five men were with me; some were suffering from fever, and the remaining porters declined to proceed. We had been on our way since early morning, and at 1 o'clock we intended to proceed to the village of Hatam, the end of our journey.

"We were on a projecting spur of Mount Arfak. The virgin forest was very beautiful. Scarcely a ray of sunshine penetrated the branches. The ground was almost destitute of vegetation. A little trackway proved that the inhabitants were at no great distance. A limpid fountain had evidently been frequented. I found here a new *Balanophora*, like a small Orange or a small fungus. I was distracted by the songs and the screams of new birds, and every turn in the path showed me something new and surprising. I had just killed a small new marsupial (*Phascalogale dorsalis*, Pet. and Doria), that balanced itself on the stem of a great tree like a squirrel, and turning round, I suddenly stood before the most remarkable specimen of the industry of an animal. It was a hut or bower close to a small meadow enamelled with flowers. The whole was on a diminutive scale. I immediately recognized the famous nests described by the hunters of Bruijn. I did not suspect, however, then, that they had anything to do with the constructions of the *Chlamydoceæ*. After well observing the whole, I gave strict orders to my hunters not to destroy the little building. That, however, was an unnecessary caution, since the Papuans take great care never to disturb these nests or bowers, even if they are in their way. The birds had evidently enjoyed the greatest quiet until we happened, unfortunately for them, to come near them. We had reached the height of about 4800 feet, and after half an hour's walk we were at our journey's end.

THE HUT.

"I had now full employment in the preparation of my treasure, and I gave orders to my people not to shoot many of the birds. The nest I had seen first was the nearest one to my halting place. One morning I took colours, brushes, pencils, and gun, and went to the spot. I there made the sketch which I now publish (fig. 1). While I was there neither host nor hostess were at home. I could not wait for them. My hunters saw them entering and going out, when they watched their movements to shoot them. I could not ascertain whether this bower was occupied by one pair or by several pairs of birds, or whether the sexes were in equal or unequal numbers—whether the male

ing manner, resting on the ground, leaving an aperture for the entrance. Thus is obtained a conical and very regular hut. When the work is complete many other branches are placed transversely in various ways, to make the whole quite firm and impermeable. A circular gallery is left between the walls and the central cone. The whole is nearly 3 feet in diameter. All the stems used by the *Amblyornis* are the thin stems of an Orchid (*Dendrobium*), an epiphyte forming large tufts on the mossy branches of great trees, easily bent like straw, and generally about 20 in. long. The stalks had the leaves, which are small and straight, still fresh and living on them; which leads me to conclude that this plant was selected by the bird to prevent rotting and mould in the building, since it keeps



Hut of the Gardener Bird, *Amblyornis inornatus*.

alone was the builder, or whether the wife assisted in the construction. I believe, however, that such a nest lasts for several seasons.

"The *Amblyornis* selects a flat even place around the trunk of a small tree, that is as thick and as high as a walking-stick of middle-size. It begins by constructing at the base of the tree a kind of a cone, chiefly of moss, of the size of a man's hand. The trunk of the tree becomes the central pillar, and the whole building is supported by it. The height of the pillar is a little less than that of the whole of the hut, not quite reaching 2 feet. On the top of the central pillar twigs are then methodically placed in a radiat-

alive for a long time, as is so often the case with epiphytical Orchids.

"The refined sense of the bird is not satisfied with building a hut. It is wonderful to find that the bird has the same ideas as a man, that is to say, what pleases the one gratifies the other. The passion for flowers and gardens is a sign of good taste and refinement. I discovered that the inhabitants of Arfak, however, did not follow the example of the *Amblyornis*. Their houses are quite inaccessible from dirt.

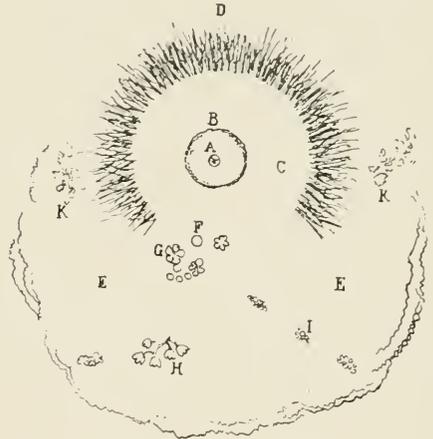
THE GARDEN.

"Now let me describe the garden of the Am-

blyornis. Before the cottage there is a meadow of moss. This is brought to the spot and kept free from grass, stones, or anything which would offend the eye. On this green turf, flowers and fruits of pretty colour are placed so as to form an elegant little garden. "The greater part of the decoration is collected round the entrance to the nest, and it would appear that the husband offers there his daily gifts to his wife. The objects are very various, but always of vivid colour. There were some fruits of a *Garcinia* like a small-sized Apple. Others were the fruits of *Gardenias* of a deep yellow colour in the interior. I saw also small rosy fruits, probably of a *Scitamineaceous* plant, and beautiful rosy flowers of splendid new *Vaccinium* (*Agapetes Amblyornidis*). There were also fungi and mottled insects placed on the turf. As soon as the objects are faded they are moved to the back of the hut.

"The good taste of the *Amblyornis* is not only proved by the nice home it builds. It is a clever bird, called by the inhabitants *Buruk Gurea*—master bird, since it imitates the songs and screamings of numerous birds so well that it brought my hunters to despair, who were but

too often misled by the bird. Another name of the bird is *Tukan Robon*, which means a gardener."



Ground plan of the Gardener Bird's hut, showing the tent pole, opening, and garden.

NESTING NOTES ON THE WADERS OF THE DEVILS LAKE REGION.

BY EUGENE S. ROLFE, Minnewaukan, N. Dak.

Let those who will list among the Waders of this region those merely observed in passage during the migrations. I see nothing distinctive in lists of this description and speak only of those species known or believed by me to make this their summer home.

Wilson's Phalarope is very abundant and to be found after May 15, about the edges of all sloughs, ponds, lakes and wet meadows. On two small flat islands in Devils Lake, that but a few years ago were mere sandbars and are now covered with scant grass and weeds, I observed them this month (June, 1899.) in great numbers. Their nests, of which I chanced upon some half dozen, were placed invariably on the ground in the midst of a slight tussock of grass—the trifling lining, sometimes, being necessary to keep the eggs up out of the damp ooze beneath, which, four in number, are sometimes so highly polished and rich in coloring as to make it difficult to mark them legibly with a pencil.

When flushed from the nest the hurried flight of the sitting male for some dozen feet or more before alighting is amusing, the head being held high while the feet and legs dangle slightly downward. Then follow the usual subterfuges to lure the intruder away such as are only common to the female of other species.

The only note I have ever heard is that aptly described by Elliott as a "nasal, quack-like sound", so faint, however, as to be scarcely noticeable and heard only when the birds circle about close overhead after being disturbed on their nesting ground.

The American Avocet is becoming somewhat uncommon here as the country is developing so rapidly. Four years ago about the muddy

shores of an alkaline lake a colony of some twenty-five pairs made their summer home.

Since that time I have at no time been able to locate a colony of more than three or four pairs, and this year a scattered pair at rare intervals is the sum of my observation. In my experience the nest is invariably placed on the flat, muddy, alkaline shore within a few feet of the water, without the slightest effort at concealment and much after the manner of the common Tern, a common associate of the Avocet hereabouts. The eggs are generally four, and, except for their larger size and pyriform tendency, not wholly unlike many examples of eggs of their comrades, the Terns. Oftentimes the eggs are completely encrusted with alkaline mud from the feet of the sitting bird.

I never yet succeeding in observing the bird on the nest. She is of such bright, conspicuous colors, and her nest is so exposed that she finds it expedient to vacate the premises while the intruder is yet hundreds of yards away, foolishly, however, setting up such a clamor, joined in by her mate, as to give assurance of a nest near by.

I read in Davies', Goss' and Elliott's that the nest is placed in tall grass, and while this may happen, yet, as I have elsewhere stated, I regard the crude picture given by the notorious Raine at p. 54 of *Bird Nesting in Northwest Canada* as very graphic and true to life, both as to the favorite breeding haunts of the species and location of the nests and the general appearance and demeanor of the birds.

Whether Wilson's Snipe ever nests in this region, I cannot say with certainty. Twice, I think, I have noted solitary individuals here about July 1.

A pair of Stilt Sandpipers are to be seen any day this month (June) feeding unconcernedly within sight of this town on a wet, closely cropped meadow enclosed in a pasture and within one hundred feet of the roadside. If they ever seemed to have any business other than feeding one might think they are nesting here far away from their Arctic summer home.

If the Least Sandpiper does not nest about Devils Lake then all signs fail, yet the positive proof is still wanting. Many times before this year I have observed the little fellows in pairs or wisps all through the summer happily feeding along the sandy, gravelly shores. This year I have spent more time than usual about the lake, and while I find no stronger symptoms of nesting yet my respect for this blithe species is lessened if in fact they are simply idlers here in such numbers all through the bright summer, so busy a season for other varieties. As stated in "Birds of the Northwest" Dr. Cones noted the Least Sandpiper all through the breeding season in Northern Dakota and suspected they might in nesting.

The Marbled Godwit is becoming rare hereabouts as a summer resident. Since the Northern migration ended I have this year seen but a single pair. The nest has been taken here at rare intervals. Mr. Bryant states that two years ago he chanced upon a nest besides an old roadway on the wild prairie and some little distance from water. The same year a field collector here bought a pail full of eggs from a settler, among which were three eggs that might fairly be attributed to this species, said to have been taken from a nest a few yards from a broad coulee in unsettled country. May 22, 1892, while driving across a ridge between two large marshes in new territory, I discovered a nest of this species containing full set of four eggs. The distress of the sitting bird was so great that my wife, to whom the spectacle was novel, persuaded me to leave the nest untouched!

The Western Willet might be called fairly common here through the summer, though where they hide their nests is becoming a serious puzzle to me. Now and then about some alkaline slough or lake a pair makes a vigorous onslaught on me saying in effect that I am trespassing too near the nest, but I never succeeded in locating it. I suspect the bird—unlike most other tattlers—is not a close sitter. Last summer a boy herding the town cows nearby noted that one of the animals far ahead flushed a Willet from the moderately long grass. The nest, to which he afterwards piloted me, was on high and dry prairie fully 100 yards from the edge of a wet meadow, and built after the manner of the Bartramian Sandpiper, which, if the books are correct, is an unusual instance both as to situation and construction. Almost any still evening before dark one or two of these birds may be seen and their stirring *pill will* heard near an alkaline pond and a slender coulee winding through the very outskirts of the village, and there is little doubt that their nest is concealed almost in our midst.

The Bartramian Sandpiper is an abundant breeder on the prairies here although the nest

is rarely discovered, except by flushing the bird which is a remarkably close sitter. I think I never detected the birds in the act of building. Being rarely shot at they are so tame and confident that they barely turn aside to give room to a passer by. One wonders that a bird of such small, slender body is able to extrude an egg of such size as those usually found, though last year I noted one very beautiful set (now in the collection of G. Frean Morcom) scarcely larger than large eggs of Wilson's Phalarope though thicker and much more blunt.

Until this year I had regarded the Spotted Sandpiper as a rather rare breeder here, but I now discover that in this region it is more local than rare. On the two islands spoken of above I found this species in great profusion and as busy as bees in their housekeeping. From June 5 to 15 some half dozen nests were observed with completed sets built in the midst of slight tussocks of thin grass very similar to those of the Phalaropes.

The Kildeer appears as common here as elsewhere in the United States. Ranging in time from May 10th to June 20th, I have found the nest on gravelly knolls, on sandy ridges, in the edge of plowed fields, and on the gravel beach of the big lake. A boy who brings us green vegetables says that last season two pairs nested in their potato patch close to the house.

The Semipalmated Plover probably breeds here rarely. I had been so informed but hardly credited the claim till this year when I observed the birds in pairs all through June at three points above the lake, and though I did not discover the nest yet the conduct of the birds was suggestive of domestic operations. A common habit of this species is that of taking up a position on a good sized boulder in the edge of the water where it remains perfectly motionless for a long time as though in deep contemplation; but ordinarily it is busily engaged along the muddy shores in pursuit of its food, oftentimes suffering approach within a dozen yards before uttering its quick alarm cry as it takes wing.

This year I was fortunate in extending my acquaintance with the Belted Piping Plover. I do not understand the apparent disposition of the principal writers to pass this species over so lightly or as if it has doubtful title to a place in the list. It hasn't even a number in the list all to itself—and yet besides a habitat entirely different from that of the Piping Plover of the Atlantic coast the complete black band entirely encircling the lower neck is a *constant* feature, and not accidental in scattered individuals as suggested in even the latest edition of Cones' key.

My experience of last year as related in OSPREY for February gave me a clue to the nesting habits of the species and I sought them in similar places this year. At only three different localities were they to be found along some twenty miles of lake shore; on the two islands spoken of above and on a long, gravelly point running far out into the lake, and I shall be surprised if they are found breeding elsewhere in the state than about the shores and islands of Devils Lake, for during fifteen years here I have never even seen it elsewhere and imagine

that only here does it find conditions suited to its nature and taste.

To those who have met with the nest of the Piping Plover of the east the nesting habits of its belted relative of the west may not offer anything new; but they will probably bear me out in the statement that the nest though absolutely exposed to view is yet as difficult to discern as the most cunningly concealed grass nest. The problem is this: Given a strip of flat, gravelly shingle perhaps 20 feet long by 10 feet wide, absolutely bare of vegetation, to find a Plover's nest containing four eggs and in plain view somewhere in the center. Seeing the bird running rapidly away from this strip when approached within 60 yards, cross and recross this small space with the closest scrutiny, scanning every pebble, apparently, and then, baffled, withdraw to some concealed point 20 yards away and wait fifteen minutes for the parent bird to return and point out the exact location, (for she will do it) and then probably you'll fail again and have it all to do over before the eye finally succeeds in differentiating those sand-colored, finely spotted eggs from the surrounding gravel stones. Once definitely located the eye seems to see little else, and one wonders how it could have ever passed them over reposing so daintily in the slight depression on their unique bed of fine, smooth pebbles most carefully selected and arranged as the sole lining. Perhaps nothing but the extreme solicitude of the sitting bird, which leads her to bravely return to her eggs even while the intruder is near, has rendered the search successful.

Davies says of the Piping Plover that it is stated she rarely sits upon her eggs except at night, and in his account of the Belted species he says that its habits are those of *meloda*. It is my observation, however, that *circumcincta*

rarely leaves her nest except when disturbed, and then displays more than ordinary anxiety to get back, and it seems extremely improbable that either upon the Atlantic coast or in this region could eggs exposed all day on the open beach retain sufficient heat to insure hatching. This idea might arise from the fact that the sitting bird leaves her nest while yet an intruder is a long way off, and before the eye can catch the little sand-colored body running over the sand in a series of short spins, and it will be found she has already put some distance between herself and the nest. The eggs, however, the day be sunny or cloudy, will always be found warm.

In my study of this species this year, I was especially fortunate in locating a colony of four pairs occupying a strip of shingle, lately a shore line before the receding of the waters of the lake, some 200 yards in length, and about 50 feet from the present water's edge. The alarm note is a single, clear, short, sweet, piping whistle. This is varied by two equally short, sweet notes quickly uttered, the second being two full tones below the first, and suggesting the two whistling notes employed by you years ago to bring to your side the ragged chum of boyhood—though far below the Plover's notes in musical quality. Sometimes when disturbed, and flying about this Plover titters a long, faint, mournful whistle, scarcely audible from a little distance.

The principal companions of this species, so far as observed this year, were the Ring-billed Gull, Common Tern, Least and Spotted Sandpiper, Semipalmated and Kildeer Plover, Wilson's Phalarope, Avocet, various species of ducks, and occasionally a big bunch of White Pelican.

THE REQUIREMENTS OF A FAUNAL LIST.

By W. E. CLYDE TODD.

Devoid of interest to the general reader, and too often passed over even by the professed biologist, the faunal list is yet invaluable to the student of zoo-geography, furnishing as it does the data essential to a proper elucidation and understanding of the various interesting problems in this important branch of biological science. Indeed, zoo-geography may be said to consist of the logical inductions and conclusions drawn from a number of local lists, themselves not necessarily of intrinsic value. It is therefore right and proper to encourage the publication of such lists, as in direct proportion to their number and excellence will be the extent of our knowledge and the exactness of our understanding of the geographical distribution of life.

It is further obvious that a list of the components of the fauna (or flora) of a given region will fulfill the above end according to, first, its accuracy, second, its completeness, and third, the fullness of its data. So many local lists deficient in these essential respects appear from time to time that it would seem desirable to indicate just what feature such papers should embrace so as to be most useful and valuable. The

time has gone by, in ornithology at least, when a merely nominal list of species can suffice for our requirements: we must know the local status of each species, and that this knowledge may be fully intelligible, we need to know something about the region which it inhabits. A local list of birds presents perhaps greater difficulties in its proper construction than one in any other class, owing chiefly to the fact that birds are migratory and otherwise extremely mobile in character, and their exact status is frequently hard to determine, so that the significance of the presence or absence of a given species is often uncertain. The earlier authors were conspicuously vague and general in their statements along these lines, and not infrequently in absolute error. Comparatively little data of value are to be had from their works, and even in more recent years many writers have fallen far short of the desirable and proper standard. Indeed, when we consider the extent and character of the data available to Dr. J. A. Allen in 1871, when he published his memorable paper on the ornithological faunal areas of Eastern North America (Bulletin Museum Com-

parative Zoology, Volume II, Number 3), the wonder is that the conclusion reached were nearly so accurate as later work has shown them to be. The writer has had occasion to examine many local lists, as well as to prepare a number for his own use, and out of this experience have grown the suggestions embodied in the present paper. While these are intended to apply only to bird lists, it is believed that many of the ideas set forth will apply as well to the preparation of local lists in other departments of natural history.

A model faunal list consists of two parts: the introduction, or descriptive portion, and the list proper, with its annotations. The sequence of the subject-matter of the introduction, though not determined by an invariable rule, is orderly and logical, all the points being discussed fully and clearly, avoiding loose, vague, and careless statements. The geography of the region covered by the list should be carefully described, the more minutely the better. The exact boundaries of the district should be precisely indicated, as it is important to know to just what extent of the territory the observations as a whole refer, and what portions have been most thoroughly worked. The surface features are to be indicated in sufficient detail, defining and describing the various areas of plain and hill, mountain, plateau and valley, not omitting their respective altitudes above sea-level where known. The drainage system is to be worked out, comprising a suitable description of the water-courses, lakes and swamps.

Not less important, from its intimate relation to bird life, is the character of the vegetation of the various topographical areas, particularly as regards the forest-growth. The character and extent of the forest is to be indicated, specifying the most prominent and characteristic trees comprising it, particular attention being given to their affinities and local distribution. In the Eastern United States the distribution of conifers is of especial importance in this connection. Mention should be made of the birds characteristic of the various forest-areas, and such informal lists should form a part as well of the more detailed description of the tracts of open country, swamps, stream-banks, etc., upon whose botanical aspects notes are also desirable.

The time-period covered by the observations of the list, whether a number of years or but a few days, should be stated, with limiting dates. If more time were devoted to field-work at one season than another it should be so mentioned. Notes on the climate of the region, on migration and migration routes, on "fly-lines", on the relative abundance of certain groups of species, and any other facts of a general nature, are to be included in the discussion.

There should be added, at least where observations have not been confined to one period of the year, nominal lists of species, properly arranged under their respective categories as to seasonal status, each list being preceded by a statement of the number of species included therein. These lists constitute a convenient summary of the whole paper. The introduction may very properly closed with a discussion of the faunal position and relations of the region.

The first rule as to the list proper is: no species to be included whose occurrence or identification is in the least doubt. If such are thought worthy of mention at all they should be relegated to a supplementary "hypothetical list". For uniformity's sake the sequence and nomenclature of the species should follow that of some recognized standard, such as in this country, the "American Ornithologists' Union Check-List of North American Birds". It is well to avoid, as far as possible, sameness of expression in treating the different species, thus doing away with much undesirable monotony.

The seasonal status and abundance of a bird are the most important items to be noted. Thus, it should be indicated whether each species is a permanent resident, summer resident, winter resident, transient visitant during the migrations, or merely an accidental straggler. Not infrequently, however, it is uncertain to what category a given species properly belongs, owing perhaps to the fluctuation in abundance from season to season, or from year to year. In such cases full data on its occurrence should be given, from which the reader may draw his own conclusions. It often happens that a bird is resident as a species, but migratory as individuals. Again, some species may winter in small numbers, the bulk going farther south, while others may breed but sparingly, the bulk in such cases passing on to the northward. Transient visitants are often more abundant in spring than in fall, or *vice versa*, and have different haunts and habits. Some birds may be of regular occurrence, others quite the reverse.

The seasonal abundance of each species as thus outlined should be given in terms as explicit as possible, although it is unfortunately true that in the nature of the case the terms used to denote degrees of abundance do not mean the same to different persons. Often it is an advantage to compare the abundance of a given species with that of a near ally, stating their *relative* number. The more numerous a bird, the more general may be the discussion of its status and abundance, but in the case of rare species the data, precise locality, and circumstances of each occurrence should be given if possible. Exceptional and unseasonable occurrences of any species are always to be noted, with necessary particulars.

As a rule, it is safe in this latitude (Pennsylvania) to consider species found during June to be breeders, but to this there are conspicuous exceptions. It should therefore be stated upon what grounds the species is entered as a breeder, that is, the finding of a nest or unfledged young, or merely occurrence in or through the breeding season, noting also the usual time of nesting, and whether more than one brood is reared in a season. In cases where nests of rare species have been found, full particulars should be given, with a description of the nest and eggs, not forgetting the date and precise locality. Full data on the nesting of any species whose breeding in a given locality is exceptional is also desirable.

Scarcely less important, in the case of migratory species, than the statement of seasonal occurrence is the *time* of the occurrence. Here

dates should be freely quoted if a record has been kept, though general statements on this score are always better than none at all. The *average* time of arrival and departure should be given, followed where possible by a statement of the limiting or extreme dates, with years attached.

In addition it is well to mention the favorite haunts of a species, and state the *manner* of its occurrence—whether, at a given season, it is found single, in pairs, or in flocks, is in full song or voiceless, etc. Any new or interesting points in its life-history, or any other facts bearing on its distribution and migration, are of course also to be noted.

Where a list of birds is the result of but a few days' or weeks' study of a locality it is obviously out of the question to treat each species as fully as above indicated, but it is desirable to record as much as possible concerning its abundance, local distribution, haunts, nesting, and manner of occurrence during the period of observation. The writer is of the belief, based on personal experience, that a trained field observer can gain a very fair idea of the characteristics of the summer avifauna of a locality by a few days' careful work in the height of the breeding season, with the probability of error reduced to a minimum. Such a list, though necessarily incomplete, is correct so far as it goes, and of corresponding value.

Faunal lists may be roughly divide into three classes: first, those covering a comparatively restricted area and period of time, as above in-

dicated; second, those covering an area as large as a county for a year or more; and third, those which aspire to summarize our knowledge of the birds of a state and which should always be accompanied by a bibliography. It is scarcely necessary to add that the last is by far the most apt to be valueless and unsatisfactory, because of its usual lack of precision. General statements are all right, of course, but should be accompanied by the particular facts upon which they are based. Anyone who has ever attempted to map such records as "Breed regularly in Southern New Jersey", "Nests sparingly in the Northern and mountainous portions of the State", "Breeds in [the] Northern Peninsula", "Found all along the Atlantic seacoast", etc., will appreciate the fact of this suggestion. There has been a marked tendency to improvement of late years in State lists in this respect, of which Mr. Amos W. Butler's "Birds of Indiana" (Indiana Geological Report for 1897, pp. 515-1165), may be cited as a conspicuous and successful example. Mr. Harry C. Oberholser's "Preliminary list of the Birds of Wayne County, Ohio" (Bull. Ohio Agricultural Experiment Station, Technical Series, Vol. i, No. 4, July, 1896), may be mentioned as an example of a properly prepared county list, while Dr. Jonathan Dwight, Jr.'s paper on the "Summer Birds of the Crest of the Pennsylvania Alleghanies" (Auk, ix, 1892, 129), is to my mind fairly illustrative of a model faunal paper of more restricted range.

NESTING OF STEPHEN'S WHIPPOORWILL.

By PHILLO W. SMITH, JR., St. Louis, Mo.

Having no recollection of ever having seen an article on the nesting habits or eggs of this Whippoorwill, I will give a few extracts contained in a letter from a friend who collected me two sets this season.

In camp in Cañon in Huachuca Mountains, Mr. O. C. Poling writes: "among the rarer sets and skins that I have taken for you are two fine fresh sets of the Stephen's Whippoorwill. After three days of almost constant search, I was startled by seeing something move right under my feet; it proved to be what I had been so long looking for—Stephen's Whippoorwill. The bird had to be driven from the nest, which contained 2 fresh eggs which I secured, together with the female; the nest was located on a steep hillside, and consisted of a few oak leaves in a slight depression; date May 12, 1889. The second

set was taken on May 22d, under almost the same conditions, the female refusing to leave the nest until driven off.

The two sets, now in the writer's collection, very much resemble in shape and color sets of the common Poor Will in his collection, being possibly a trifle larger, and one egg of each set has a few almost imperceptible pinkish spots on one end, the other egg in each set being unspotted.

A few among the good takes which Mr. Poling sent me were fine skins and sets of the following: Lucy's and Black-throated Gray Warbler, Vermilion, Buff-breast, and Sulphur-bellied Flycatcher, Arizona Jay, (2 eggs spotted), Painted Redstart, Strickland's Woodpecker, Lead-colored Bush Tit, etc., etc.

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Comments.

THE ORIGIN OF THE HAWAIIAN FAUNA.

In the *OSPREY* for January we considered the origin of the Bird Fauna of the Hawaiian Islands in comparison with that of the other Vertebrates. It was observed that the characteristic element of the Avifauna appeared to had been derived from American sources. The same origin must be conceded for the single non-marine mammal—a bat. On the contrary, all of the reptiles—seven species of lizards—are conspecific with representatives of the farther west or (in one case) closely related to such and must have come in from the west—that is, from the direction of Asia.

Far more numerous in species and more characteristic of the Hawaiian Archipelago are the preponderant element of the land shell-bearing Gasteropods. A comparison of them with the birds cannot fail to be of interest.

The Mollusks are represented among inland forms only by the class of Gasteropods, there being no fresh water mussels or clams (Unionidae and Corbiculidae). The Pulmoniferous Gasteropods, however, are represented by more than four hundred species and considerably more than three hundred of them belong to a peculiar group which has been designated as a family—Achatinellidae or Heliceteridae although family or

even common—characters have not been discovered as yet. This group with its numerous species is peculiar to the islands and its nearest relations appear to be with Polynesian forms to the west. At any rate, there are no *certainly known* relatives on the American continents—North or South. It may be, however, that certain forms—for example the *Leptinariae*—of the West Indies and middle America are related and a most competent judge is inclined to believe that such is the case. Nevertheless, more nearly related forms are to be found in Polynesian islands and the westward generally.

In fact the question of the relationships of the characteristic forms of the Hawaiian Islands is still an open one and can only be positively answered when they and other forms have been subjected to a more critical and comparative examination of anatomical minutiae than has been done. The question is further complicated by the fact that there are two very distinct types of lingual dentition manifest among the forms collected together under the denomination of Achatinellidae. These types are so dissimilar that, if the shells of the animals possessing them were not so similar to each other and found in the same region, they would never have been regarded as belonging to related forms.

The most noteworthy feature of the land shells of the islands is the extraordinary numerical development and the restriction of most species to very limited areas. Fischer has given the number as over 400. ("On a decrit plus de 400 espèces"). These figures are near enough to the truth for our present purpose, especially as no two conchologists would be able to come to the same conclusions after independent studies. Specific variation is often so extensive and specific differences are often so slight that it is difficult in many cases to decide what are specific characters and what variants of lesser value. Knowledge of association and mode of occurrence of the forms might modify considerably the conclusions based on examination of the shells alone and would frequently, anyway, be suggestive or throw light on subjects otherwise obscure.

The question, then, what is the origin of the Hawaiian land shell fauna is not only difficult to answer in the present state of our knowledge, but is probably a complex one. It is scarcely likely that any of the forms are the derivatives of primitive types or from those that have existed there much earlier than the tertiary period. It is more probable that all are derivatives from forms that have drifted or been carried from

other regions, but on various occasions since early tertiary or perhaps cretaceous times.

The extent of differentiation and segregation of the predominant Achatinellines almost compels us to believe that their progenitors came upon the islands very early. With the present feeble light to guide us it seems to be more likely that these progenitors came from the west of the islands.

As to the other forms, there appears to be no evidence that they have been derived from the east—that is, from America. Their relationships, on the whole, are with forms of the Polynesian islands or even the Asiatic mainland. Nevertheless, the evidence is not conclusive and it may be yet proved that an American element has entered into the islands.

In fine, the evidence seems to indicate that the terrestrial Gasteropod fauna of the Hawaiian Islands has been mainly derived from sources western to the archipelago and thus we have an

apparently striking contrast between the origins of the characteristic elements of the Bird fauna and the Shell fauna. The evidence may, however, turn out to be superficial. The reality can only be positively demonstrated—or falsified—when detailed comparative anatomy has been applied to the taxonomy of the Achatinellines and to sundry other forms in the islands as well as outside of the archipelago. In the birds, we have had a similar stage. As long as the anatomy was unknown, we had not the criteria to decide what were the relations of many of the Hawaiian species. In fact, the last word has not yet been said of the birds and it may turn out that we will have to amend our notions respecting the affinities of some of them even. This, too, may lead to new conceptions of the origin of the avifauna. In the meantime, we had best accept the conclusions of our learned friend, Dr. Stejneger, but with a will to alter our opinion if the evidence shall compel.

Letters.

WHAT IS THE SQUEALER DUCK?

NEW YORK, Dec. 25, 1899.

EDITORS OF THE OSPREY:

In yesterday's (Sunday's) *Sun* of this city there is a long article on "Shooting Squealer Duck" in Arkansas which I send to you herewith. I have tried unsuccessfully to identify the duck, but I suppose it must have been described as so prominent a bird could scarcely have escaped recognition till the present time. It is described as being especially fond of acorns or mast. For the rest, let the writer speak for himself.

"This duck is in reality a variety of widgeon, though in habits it resembles the wood duck. It will even light in trees occasionally, though it does not nest in them. It gets its name from the peculiar whistling sound made by its wings when it is in rapid flight. This whistle at times becomes a positive squeal.

"The duck is about the size of the teal, with a pronounced topnot of black feathers. It is of a dark brown with less brilliant coloration of the wings. It is also plumper of body and will weigh more. In flight it is much like the teal, having the same rapid beat of the wings and it gets through the air almost as fast. It is more difficult shooting, because it is rarely found on open water. Deep buried in the woods, it spends the winter exploring the pond bottoms. It darts between trees and through branches at lightning speed and no man not a high-class snapshot can hope to make a respectable bag though the "squealers" be flying past at the rate of one every five minutes in the day. It derives its remarkable steering power from its tail, which is large and strong and may be elevated or depressed several degrees at the will of its owner. A 'squealer' in full flight, suddenly perceiv-

ing some danger ahead, will dart almost at right angles to its course. In turning it does not describe a wide curve, as do all other ducks. The depression of its tail and the depression of one wing and elevation of the other spin it half round almost as if it were a top. In another second it is out of sight, buzzing amid the green branches as if it were a dragon fly".

"There is no form of shooting which more severely tests the capabilities of the marksman, because aim must be taken in half a second and in that half-second every calculation must be made with something approaching to exactness. Often the passing birds are nearly as high as the tops of the tall trees. The space they cross is never more than fifty yards wide and sometimes it is not more than twenty-five yards. A "squealer" under full headway will fly twenty-five yards in much less than a second. If it be going at its best speed and one hundred feet high, it will be necessary for the ducker far below to lead it by not less than a dozen feet. Under these circumstances, it is not surprising that even the best of gunners can do no better than one in three.

"The 'squealer' is the only 'high-diving' bird known to this section and some of its feats in this way are marvelous. It is rarely injured in its mad plunges, seeming to possess an instinctive knowledge of the depth of the muddy water and the proper force with which the descent should be made. Indeed, the skill with which it steers itself at full speed in and out among giant limbs of the trees is not less marvelous than its apparent recklessness of plunge. The 'squealer' never hurts itself in darting through the forest unless it has been severely wounded,

There have been many instances of a bird blinded by shot, or shocked into craziness, hurling itself against a trunk or limb and falling dead. More than once also blinded birds have been caught in the huge masses of Spanish moss which hang high up, and there died, securely held but out of reach".

"The most distinctive note of this duck is the whistling sound made by its wings, but it has a queer sort of quack, mild and not far reaching, with a falsetto twang to it. Some men are very successful in imitating it.

"The bird is very excellent on the table, being of proper size for the broiler. Always at this season it is seal fat, the white tissue overlapping its red flesh in layers. Ducks fed upon acorns, or "mast", are of as superior flavor as is mast-fed pork. They have a rich, nutty taste, the oil from the acorns and beech nuts appearing to go into their meat. A characteristic of their fat is that not any quantity of it will produce indigestion when it is thoroughly cooked".

What is the bird? I am sure others would be interested to know as well as myself. I should like to see the whole article republished in the OSPREY even, so as to be preserved in convenient and permanent form. Will you do so?

Yours truly,

C. W. C.

ANSWER.

We reprint the extracts sufficient to give the prominent characteristics mentioned by the writer in *The Sun*. The article, occupying a column and-a-half of *The Sun*, is too long to be republished in full.

The bird referred to by our correspondent is perhaps—almost probably—the Hooded Merganser, *Lophodytes cucullatus* of ornithologists. In this opinion, Mr. Ridgway and Dr. Richmond concur. The name "Squealer" does not appear to have been recorded previously in connection with this bird. The only duck to which the term has been attributed hitherto is the Harlequin (*Histrionicus*) which, according to Mr. Gurdon Trumbull, is so designated in some parts of Maine. We are therefore happy to learn that the Hooded Merganser may be similarly named in Arkansas. Few of the vernacular names current in the west have been collected. In fact, the only ones known to us are Wood duck and Tree duck current in the Wabash valley, Bec-scie (Saw bill) about Mobile, Hairy-head and Tadpole in Florida (around St. Augustine), and Spike-bill in Michigan (near Detroit). The synonyms employed in the Atlantic states are numerous.

The account of the Squealer essentially accords with those given by authors of the Hooded Merganser although the characteristic features are emphasized or perhaps exaggerated. Three exceptions should be made.

The statement of the writer that the "duck will even light in trees occasionally, though it does not nest in them" is remarkable and is the chief reason for the gravest doubt about the

correctness of our identification. It is just in trees that the Hooded Merganser does nest, but by trees we mean those more or less hollowed out. It resembles the true Wood or Summer duck in this respect, and indeed sometimes disputes possession of a goodly site with that species. Such an instance was noticed by Mr. George A. Boardman of Calais, Maine. It is to be remarked that although the writer says that "there have been many established instances of its breeding in this part of the state" [about Frostville] and that "it is a fecund duck" no details of its nesting are given.

The statement that the Squealer feeds on mast is also opposed to what we know of the habits of the *Lophodytes* as well of its apparent capacity. The narrow bill of that bird seems to be little adapted for seizing or giving passage to acorns.

Finally the Hooded Merganser has not a high reputation as an edible duck. In the words of Baird, Brewer and Ridgway (*Water Birds* ii, 123) "its flesh is not held in high esteem" and by most persons it is discredited; nevertheless it is quite supposable that one fed on mast might be quite palatable. But does it really feed on mast?

In fine, a pronounced topknot is only possessed by the Hooded Merganser (*Lophodytes*) and the Summer or Wood duck (*Aix*). Inasmuch as the Wood duck is excluded by special mention the Hooded Merganser alone remains, and the "pronounced topknot of black feathers" is characteristic of that bird, although even in summer plumage it is relieved by white. Will not some "Arkansas traveler" or resident send us a specimen and thus enable us to verify our guess or disprove it, and ascertain what the Squealer really is? We can only say that if it is not the Hooded Merganser, we do not know what it is. It cannot be an undescribed species.—EDITORS.

SUNDRY QUESTIONS AND ANSWERS.

KINGSVILLE, OHIO, Jan. 2, 1900.

EDITORS OF THE OSPREY:

I herewith enclose a few questions for your consideration, and will be glad if you can answer.

Respectfully,

J. M. KECK.

QUESTIONS.

1. For a number of winters I have observed small flocks of gulls of different species flying westward along the Ohio shore of Lake Erie. I have never seen any moving eastward. Residents on the lake shore have told me that they have never seen them passing eastward. Can any one explain?

2. Can any Ohio readers give any authenticated instances of wild ducks, aside from the wood duck, breeding in Ohio during the last five years?

3. In the Ohio Geological Survey, Vol. iv, Dr. Wheaton mentions the Great Grey Owl, *Syrnium cinereum*, as an "extremely rare winter visitor." Have any OSPREY readers observed it south of the lakes? Can any one give its nesting locality and habits?

4. Is it true that the Nighthawk has taken to nesting on the flat roofs of tall buildings in cities?

ANSWERS.

1. The movement in apparently but one direction is probably due to the fact that these birds, through some peculiarity of prevailing wind direction or land configuration, fly close to shore only when passing westward, and that they return by a route farther out in the lake, thus escaping casual observation; a condition of affairs not infrequent in other localities.

2. There do not seem to be any *published* records, though such occurrences may be known to some of the OSPREY'S readers.

3. Although a comparatively frequent winter visitor to New York State and at least the more northern sections of New England, the Great Grey Owl appears to be quite rare in Ohio, and no very recent records have come to light. The

species breeds in Alaska and British America from Hudson's Bay northward to the limit of trees. Information regarding its nidification is very scanty, but enough is known to indicate that its nest is commonly constructed of twigs and moss, with a lining of feathers, and placed in the branches of spruce or poplar. The eggs are from two to four in number, and are deposited sometimes as early as April, or even as late as June.

4. The nesting of the Nighthawk upon the flat roofs of city buildings has become so well attested that no doubt whatever remains of the fact. Indeed, so numerous are the instances, that they are no longer considered remarkable or unusual.

H. C. O.

Notes.

THE OSPREY IN ENGLAND is the subject of an editorial article in *The Saturday Review* for December 2, 1899. It is so interesting and pertinent in some respects to conditions in the United States that we feel it will be a service to the readers of the OSPREY to republish it, since the *Review* is accessible to few of them without much trouble.

The *Review* thinks that the bird is one "that loves quietness and seclusion" and that "its former Southern Coast haunts will for that reason probably know it no more." Dispair need not be entertained on that account, however, for the bird readily accomodates itself to human company when encouraged to do so. The pages of the OSPREY record several nests in villages protected by the human inhabitants.—EDITORS.

THE OSPREY.

The shooting of an osprey in Norfolk, on the ornamental waters of Mr. Justice Cozens-Hardy's estate, not long since, enables us to call attention to the case of one of our most interesting British birds, now hunted by collectors to the very verge of extinction. The rare specimens which occasionally visit the old haunts of the species almost invariably meet with the fate of this Norfolk bird; the first prowling gunner who observes them lets fly at them. And in this the osprey's lot does not differ from that of other rare birds; witness the fate of the honey buzzard the other day which roused Sir Herbert Maxwell's righteous indignation, though apparently he sees nothing to object to in the massacre of Muscovy ducks. With a little encouragement and intelligent protection from landowners the osprey might again be a familiar feature of our island waters; but in face of the fact that every specimen is shot down as soon as it appears, the naturalist who desires to see our country rich in varied feathered life may well despair of any such consummation. A few Scottish owners have done their best to preserve the species, and thanks to their efforts it still breeds in one or two of its North British haunts; but it has vanished from England. Is it too much to hope that an appeal to English landowners may result in effective

protective action with a view to wooing it back again?

It is not likely, even with the most widespread protection, that the bird would ever again cover the whole extent of its old range. It is a bird that loves quietness and seclusion; its former Southern Coast haunts will for that reason probably know it no more. But in the Lake district, where it used to breed prolifically, in the Broad district of the Eastern Counties, and several similar well-watered areas, there are still many remote and quiet places to which it could undoubtedly be encouraged to return. It is especially fond of well-wooded waters. Rivers and meres in woodland districts, overgrown islets, and similar places, give it the conditions under which it would flourish again if only the gunner could be persuaded to stop his campaign of destruction against every specimen that makes a tentative visit to our shores.

In its habits of life the osprey, if it could be induced to return to us, would be one of the most picturesque features of our water areas. The effect of the presence of a few of these fine fishing-eagles about an island lake is very striking. It has something of the hovering habit of the kestrel in its flight; and its pounce and struggle with its prey is one of the most interesting sights imaginable. It is a noisy fisher, making a prodigious splash when it plunges, sometimes going clean under the surface after a fish. It has the spiked feet characteristic of the fishing-owls, and this feature gives it a very great power of talon-grip that occasionally leads to Homeric battle between itself and its prey, in which the bird does not always come off best. For this spiked grip makes it difficult for the osprey to unlock its talons once they are closed upon the victim; and although that is an advantage when a small fish is seized, it is sometimes the reverse; and instances have been observed in which the bird has been dragged and held under water, and drowned before it was able to loosen its grip from the Tartar upon which it had pounced.

Its destruction of game fish might be urged as a reason against the preservation of the osprey; and certainly it is not a desirable neighbour for salmon and trout. But that is not a point that

can be urged against its preservation in such an area as the Broad district, where there are no game fish to be considered. A coarse fishing area such as the Broad district would certainly be benefited rather than injured by the presence of the ospreys; since they would help to thin out the huge numbers of bream that preponderate in such waters. Bream, as a surface fish—in the early morning the streams and lakes are alive with shoals of them tumbling on the surface—would be the chief prey of the osprey in such areas, to the advantage of the fishing generally, since the overwhelming preponderance of bream in our sluggish coarse-fishing waters is a nuisance rather than a gain to anglers.

Its nesting habits, again, should mark it out as a species to be encouraged by those landowners who have any care for the picturesque side of the wild life of their estates. An eyrie of ospreys would be an estate feature of a very notable kind. The nest is a huge structure of sods, twigs and grass, built as high up as the bird can find branches adequate for its support. A tree with a dead top and a lateral spread of branches at the live summit is its favourite building place; and there it spreads out a nest to the width of three or four feet, projecting outwardly so far that it is often impossible for a climber to get access to it. In the absence of such trees it will build in old ruins, and even on the bare rock in places difficult of access. The tree-built eyries are visible a great distance off; and have a fine effect upon wooded islands and forest-bordering waters. The possession of a stray specimen in a glass case is hardly an adequate compensation for the loss of the living creatures from our English landscape. We would fain hope that the better class of owners, to whom their landlordism is a trusteeship for such purposes, might even now, when the species is so nearly at the verge of extinction as a breeding British species that any such attempt must be doubtful in its issue, take such steps as may yet give us back so interesting a creature. We commend the osprey to the Wild Birds' Protection Society, which we are glad to see is issuing a Christmas card of its own. The Society's best chance of success lies in work amongst children, and the Christmas card makes an apt and graceful device for spreading the gospel of bird-love. That the design is good goes without saying, seeing that it is the work (and gift) of Mr. Archibald Thorburn.

THE CHARACTERISTIC BIRDS OF NATAL and the neighboring Boer States are noticed in *The Spectator* of London, for January 13, under the caption of Naturalists on the battle field. It is remarked that "letters from Natal and the Cape frontier show that, when not marching or fighting, the officers and soldiers find abundance of interest in the Natural History of South Africa." It seems that a useful little book on the birds of Natal and Northern Cape Colony "has been published in Pietermaritzburg by R. B. & J. D. S. Woodward (Davis and Son, Pietermaritzburg, 2 s. 6 d)." *The Spectator* has used this in its notice of the birds and so much as relates to them we publish in the OSPREY. "The Tugela Valley is famous for its birds and flowers".

"The birds of these regions are curiously mixed. Many, like the shrikes, flycatchers, and swallows, recall our familiar birds. Our English cuckoo and English swallow actually migrate as far as this far Southern continent. In contrast with these are others not excelled in brilliant plumage by the birds of the tropics, and in the same Colony in which our common red-backed shrike makes its winter home are the magnificent purple and green turacos, or plantain-eaters, and sun-birds, which rival the brilliant hues of the humming-birds. Whole tribes of different flycatchers, warblers, and shrikes inhabit the bush. Some of the bush-warblers' nests are triumphs of architecture. One stitches its nest on every side to leaves of laurels by spider-web silk; another sews its home to the leaves of tall weeds by threads of grass. The emerald cuckoo, which has a note much like that of our cuckoo, only with both syllables "long"—"coo-coo"—lays its eggs in the nests of the Karoo sparrows. The brilliant Whydah finches are well known in English aviaries. There are hoopoes, many kingfishers, some of which live mainly on locusts and do not touch fish, honey-guides, and swarms of kites and buzzards. One of the best known birds is a large grey shrike, called the "Fiscal." The "Fiscal" was a Dutch Magistrate with a large discretion in the matter of capital punishment, and the ways of this shrike rendered the name appropriate. It twists off the heads of small birds, quarters their bodies, and impales them on convenient thorns. English Colonists call it "Johnny Hangman." When kept in a cage, it will hang up all its food in this way if proper hooks are provided. It flourishes in spite of the reclamation of the Colony, and has established itself in the parks and public gardens of the towns. The familiar birds of everyday life, those which correspond to the species best known at home, are always matter of interest in a strange land. In Natal the place of our rook is taken by the black crow, which is gregarious, and increases, just as our rook does, on cultivated land, whence its Colonial name of "corn crow." Besides this South African rook there is a white-necked raven, which has the habits of our carrion crow. Before the appearance of rinderpest it was very common. But like the vultures, these carrion crows were poisoned by eating the flesh of the oxen killed by the plague, and died off in numbers. The great vulture of the hills, the "Aarvogel," was seen both at Magersfontein and at Modder River soaring over the kopjes. It is the same bird as the griffon vulture of Southern Europe, almost the largest of the flesh-eating birds of the Old World. Nor must the secretary-bird be forgotten, which is protected by law, and almost domesticated on many farms, on account of its reptile-killing habits, or the "smoke-bird," a black shrike, which follows the bush fires and feeds on roasted insects and grilled mice. Though our English swallow flies as far south as the old Colony, the domestic swallow of South Africa is the red swallow. Its head and back above the tail are red, like the throat of the English swallow. Like the latter, it is a home favourite. The Colonists put up boards as supports for its nests, and encourage it in

every way. The direct services which it renders in keeping down the number of mosquitos and flies would entitle it to protection if sentiment did not make the same claim. The Cape canary, the best song-bird of the Colonies, is common in the gardens round Pietermaritzburg, while on the Tugela a large yellow canary is found. The common canary comes in spring, and has a small relation, the "mealie bird," which lives mainly in the patches of Indian corn."

"It was reported that among the casualties at Modder River were several cases of snake-bite. This is not unlikely, for the men were lying and crawling on the hot plain, where snakes love to bask. The snakes of South Africa are both common and deadly."

"The greatest enemies of the snakes are the kites and eagles, especially the tawny eagles. These, and a very fine black eagle called the Verreux eagle, are common on the lower slopes of the Drakensberg. If the fortunes of war change in Natal, soldier naturalists may be interested to know that the latter bird breeds close to the Upper Tugela falls, on a cliff eight hundred feet high. Young eaglets from such an eyrie would be a trophy worthy of a Roman legion.

AN UNFORTUNATE INVESTMENT IN EGGS.—One of the most peculiar situations in regard to the egg supply ever known exists in the United States to-day. The situation is the result of storing eggs in an attempt to control the market. There are liable to be two results. One is that the people of the country will have cold storage eggs hoisted upon them as the newly-laid product. The other is that the people who attempted to "corner" the market will suffer heavy losses.

The beginning of the "cornering" effort dates back to last summer. At that time, it is said, the Chicago packers evolved the scheme of buying up all the eggs that could possibly be gathered together and storing them until the supply became scarce. As is usual in schemes, it was anticipated that the scarcity would send the price sky high. Then the stored eggs were to be unloaded on the market and a fortune was to be made for the packers. It is figured that 7,000,000 cases, each case containing thirty dozen eggs, were stored away. To the industrious hen, whose capacity is one egg a day, this is an exceedingly large amount.

The scheme to control the market fell through. There was no call for the stored eggs and the packers began to lie awake o' nights thinking. At present the hens are beginning to lay fresh eggs. These are coming into the market and no one wants the stored eggs.

A little figuring will show how enormous the loss will be. There are 7,000,000 cases of eggs, or 210,000,000 dozen, stored throughout the country. These were bought up at 15 cents a dozen. The present price of eggs a dozen outside of Cleveland is on an average four cents less a dozen than the price at which the stored eggs were bought. This will mean a loss of about \$8,400,000 to the packers. It is conjectured that there are 6,000 cases of the stored eggs in this city. The loss here will also be very large.

It is reported that the packers in this vicinity have a way out of the dilemma. It is said that next summer when eggs are shipped here from outlying towns, the stored eggs will be mixed with fresh ones and that in that way the old product will be sold to the unsuspecting public.—*Cleveland Plain Dealer.*

AN EGG OF *ÆPYVORNIS MAXIMUS* was sold at auction by Mess. Stevens of London for forty-two guineas on November 7th. It was bought by Mr. T. G. Middlebrook.

THE DEATH OF SIR JAMES PAGET will be felt by physicians more than naturalists. He was, however, interested in early life in zoology and known as an ornithologist. In conjunction with a brother, Charles, in 1834 he published "A sketch of the Natural History of Yarmouth," including the birds as well as other animals. He was born in 1815 and died in London, December 30, 1899.

THE DEATH OF EDGAR LEOPOLD LAYARD followed fast on that of another student of South African Birds, Dr. A. E. Stark, recorded in the *OSPREY* for January, (p. 80).

Mr. Layard died at his residence in Budleigh, Salterton, Devon, January 1, 1900. He is best known to most ornithologists in connection with his "Birds of South Africa" (1867), but was also the author of numerous articles on birds of other lands, especially Polynesian, either alone or with others.

Literature.

WABENO, THE MAGICIAN: The Sequel to Tommy-Anne and the Three Hearts. By Mabel Osgood Wright. Illustrated by Joseph M. Gleeson. New York, The MacMillan Company, 1899 [12mo. pp. i-ix, 1-346. \$1.50.]

All who have had the privilege of perusing Mrs. Wright's earlier volumes will surely welcome this, her latest production. Following lines similar to the book of which it forms a continuation, it carries the already familiar friends into new but no less interesting fields of inquiry, and the trials, joys and wonderments of their every-day life are charmingly interwoven with many and various details of accurate

nature narrative; now imparted through the medium of quaint Indian legend, now by the impersonation of some animal or some inanimate object, yet always with the same rare sympathy, the same charm of expression, which are such distinguished characteristics of our author's previous writings. Indeed, "Wabeno, The Magician" possesses all the fascination of a fairy tale, with none of its incongruities, and from cover to cover can scarcely fail to hold the attention of young and old. In every respect the present volume is fully the equal of its predecessors, and when this can be said nothing remains to be added.—H. C. O.

OUR NATIVE BIRDS: How to Protect Them and Attract Them to Our Homes. By D. Lange. With Illustrations.—New York. The MacMillan Company. 1899 [12mo. pp. i-xii. 1-162. \$1.00.]

In this little manual the author discusses the various causes which operate to decrease the numbers of our birds, suggests means by which the birds may be attracted, and makes recommendations for their protection. The several captions under which the subject is treated are given below, and will serve for a very good index of what the book contains: "Are the Birds decreasing?" "Causes for decrease of Song Birds"; "The decrease of Game Birds"; "Protecting Song Birds and attracting them to Our Homes: (1) By furnishing them trees, vines and shrubs; (2) Provide nesting boxes; (3) Provide drinking and bathing fountains; (4) Feeding birds in winter, and in unfavorable weather at other seasons; (5) Miscellaneous—Nesting material, dust baths, gravel and lime; (6) Protecting the birds from their natural enemies; (7) The English Sparrow question; (8) Birds on hats, boys, collectors, so-called bird students, bird hunters, ubiquitous gunners; (9) Song Birds as food"; "Education and the birds: (1) Educating adults; (2) Educating the growing generation"; "Game protection from the Nature Lover's Point of View"; "The Birds before Uncle Sam" (an exercise for children). Under "Miscellaneous Information" there are added lists of magazines, protective societies, Agricultural experiment stations, bulletins of the Department of Agriculture, and helpful books for the beginner, the last of which, however, might obviously be greatly extended.

Altogether, Professor Lange has brought into convenient form for reference an amount of information which will be appreciated by everyone interested in the important subject of bird protection.—H. C. O.

THE AVIFAUNA OF THE PRIBILOF ISLANDS. By William Palmer.—The Fur Seals and Fur-Seal Islands of the North Pacific Ocean, Part iii, Special Paper xvii, (pages 355-431, plates xxxviii-xli).

Notwithstanding that the recent considerable scientific interest in the Pribilof Islands has resulted in the appearance of a number of more or less voluminous reports, very little during the past twenty-five years has been published concerning the birds of this isolated group; and Mr. Palmer's elaborate treatise is thus all the more welcome. While drawing freely from all sources of information, published or otherwise, the author gives us from his own abundant experience and careful study much of valuable interest.

Following a check-list of the species and a brief introduction, the topography of the Islands is considered, chiefly from an ornithological point of view; the two main islands, St. Paul and St. George, together with the two smaller ones, Walrus and Otter, being separately described. The ornithological history of the Islands is briefly stated; the six species described and the four added to the North Ameri-

can fauna from specimens taken in the group are listed; and all the species are tabulated with reference to the manner of their occurrence. The geographical distribution of Pribilof birds, including the faunal affinities of the Islands, receives considerable attention, leading up to the conclusion that "The Aleutian Islands, the islands of Bering Sea, and much, perhaps all, of the mainland coasts of Alaska and northeastern Asia to the Arctic Sea" constitute, within the Holarctic Region, a "subregion" which is here called the "*Alcutican*". A table showing the distribution of the family Alcidae in North America, and some remarks on the migration of Pribilof birds are also added.

Succeeding this more general matter is the catalogue proper, consisting of 69 species with various critical and biographical notes, the latter often extensive. A further analysis of the list discloses the fact that but 15 are land birds; and that only 20 are known to breed, though 9 others are doubtful, included in the same category. Eighteen species, more than a fourth of the whole, are entered without any known instance of actual capture. In his account of the turnstones (*Arenaria*) Mr. Palmer takes occasion to separate the middle American form of *A. interpres* from that of Alaska, the former standing as *A. morinella* (Linnaeus); but specific rank seems inadequately established, and the bird should probably be called *Arenaria interpres morinella*. A previously unrecognized race of the Barn Swallow, from Alaska—*Hirundo erythrogastra unalascchensis* (Gmelin) is also distinguished. Reasons are given for considering *Tringa pilocucumis* and *Passerina nivalis townsendi* as full species; in the former case with apparent justification; but in the latter not so, for the principal character claimed for *townsendi*—its larger size—is invalidated by Mr. Palmer's own measurements.

Various notes scattered through the paper present some of the results of the author's investigations on the several feather growths, particularly those of early stages of plumage, and from a desirable addition to our knowledge of the subject. A new name—*Mesoptile*—is given to the individual feathers of the plumage immediately following those of the natal down, or *Neosoptiles*, to distinguish the former from the *Teleoptiles*, or feathers of the adult; but the necessity or advisability of such action is not obvious, inasmuch as a sufficient structural difference from the teleoptiles seems difficult to establish.

The classification of the higher groups comprised in the present list is based largely upon characters derived from the neosoptiles, and, it is scarcely necessary to add, differs radically from that of the A. O. U. Check-List. The four half-tone plates represent (1) typical scenes on Walrus Island, (2) a series of eggs of the Pacific Murre (*Uria lomvia arra*), showing variations, and (3, 4) various phases in the development of feathers. A bibliography of the more recent publications touching the birds of the Pribilof Islands fittingly closes this excellent paper.—H. C. O.



MEET OF SUMMER AND WINTER SPARROWS IN MARCH.

1. The Snow-bird: *Junco hiemalis*.
 2. White-throated Croww Sparrow: *Zonotrichia albicollis*.
 3. Fox Sparrow: *Passerella iliaca*.
 4. Tree Chipping Sparrow: *Spizella monticola*.
- (From Agricultural Year Book for 1895.)

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BIRDS OF THE ROAD.

BY PAUL BARTSCH, Washington, D. C.

3. FEBRUARY—MARCH.

Tell me, prognosticator of weather, what it will be this month and I will tell you which of our birds you will find; yes! I will even tell you where you will find them. Food and temperature are the two prime factors influencing the presence or absence of our winter birds.

The climatic conditions of the past month may be summed up in two words—fickle and moody. On the morning of the fourth of February we enjoyed gliding over the frozen surface of the river, but this was the last of it. It was very warm and by noon the incoming tide left quite a wide space of clear water between the shore and ice. Here I heard the first faint notes from some frog who was tired of his slumbers and drowsily said as much.

The Turkey Buzzards returned this day after a short absence of two weeks. They were following the river, closely inspecting its white surface and banks. The crows which have been more loyal to their surroundings, resented their invasion, and I watched a number of battles between them. In each case the buzzard was forced to retreat hastily in order to escape the vigorous attack of his glossy pursuer.

On the fifth the ice left the greater portion of Eastern Branch and the Ring-billed Gulls once more returned to disport their various plumages. In the little flock which has been frequenting this part of the river scarcely two seem to wear the same dress. Some are very dark, with characteristic light bands showing in the expanded wing,—others are of the pearly gray and spotless white; still others present phases connecting the two.

Several cold days followed and the river again closed up. One morning while on my way to office, I noticed a most beautiful picture, one of the best which this season has added to memory's store. The sewer which discharges into Eastern Branch, east of the eleventh street bridge, carried water of a slightly higher temperature than the river, and thus kept a small area near its mouth free of ice. On the night

of the tenth the river had been quickly spanned with a crystal bridge, and the morning of the eleventh found crows and gulls flying over the ice sheet in quest of breakfast. A large band of the black fellows formed a chain about the open lake at the sewer's mouth, while in its centre two gulls were swimming and a third one gliding about. What a contrast they exhibited! a commingling of avian light and shade. On the following morning I noticed quite a number of gulls and crows gathered on a little island formed by the dumping of dredged material a little west of the bridge. It is the great contrast of color which causes these scenes to appear unnatural but hunger, we see, will even make the peaceful gull contend with the pesky crow for a meal. The following days gave us an occasional glimpse of a band of Blackbirds, Red-wings and Rusty, which had arrived as a first consignment from the south.

February 15, warm, yet crisp, delightful and invigorating. Spring indeed has begun to-day. As I took my noon-day stroll through the Smithsonian and Agricultural grounds, it seemed as though every thing was saying, spring! spring! spring! The battles which Old Boreas and Spring have fought the past week have been very severe and many broken branches testify to a great list of casualties. The Ice King has been forced to retreat, battles may still be in progress in more northern latitudes, but here to-day, we celebrate the victory of spring. Many have come to aid in these festivities. The red maple, red with chaffing at the winds, has lost all control and burst a thousand swelling buds, in assuring spring of her fidelity. Peace! peace! peace! say the branches of the greening elm and other trees as they sway to-day. The maples' impulse seems to have been extended to the sycamores, whose balls so closely guarded, so firmly held all winter, are relaxed and begin to show the fuzzy seeds ready for dispersal. Numerous insects, familiar features of a year ago, are sporting and basking in the moist sunny places of our walk, and a woolly bear has left his safe retreat and gone explor-

ing. Dandelions, chickweed, and here and there a bed of the whitlow grass, visited by the ever busy, restless bee, break the sameness of the greening turf. There is expectation in the air, everything seems ready and expectant, everything is astir. The deadness all seems gone, the trees appear to yawn and stretch their branches after the long slumber now happily past. Tomorrow must bring new faces,—birds from the south are coming! But tomorrow did not. True to the past strain of weather, we had snow, snow, snow, and more of it on Saturday "with increasing northwesterly winds." Dakota blizzards would have expressed it better. Fifteen inches of snow on the level, more or less where the wind chose to rearrange it. Sunday the eighteenth was cold and I was pleased to remain indoors with a good fire and observe the birds from my window. Our cedars have borne a great crop of berries this year and have for some time been a favorite resort of our birds. Sunday and during the cold days which followed a large flock of Purple Finches was busily engaged discussing the quality of this

fruit. Occasionally a bright colored male would occupy one of the exposed outer sprays and thus display his flashing armour of red in the warm sunlight. How different a bird looks when the sunshine is playing upon his plumage! the colors seem to become animated and appear as different as a stuffed skin does from the living member, in form. The Juncos were enjoying the berries which had been dropped in the snow beneath the tree.

I freed a large area from snow and scattered hemp seed on the ground. Soon a band of Snowbirds repaid me for my trouble, fourteen of the busy little slate-colored fellows were feasting on the meal spread before them. A solitary Fox Sparrow remained with me all day, leaving only when disturbed, but returning at once when danger seemed past. Two White throated and three English Sparrows conclude the list of Finches which partook of the hemp. Though I believe the Yellow-bellied Woodpecker which joined their company helped himself to an occasional grain. He soon however discovered that a piece of fat pork, which was nailed



The Yellow-bellied Woodpecker or Sapsucker: *Sphyrapicus varius*.
(From Bulletin 7 of Division of Economic Biology D. A.)

to the trunk of the cedar, was not to be despised for he nibbled and pulled and twisted and punctured it for quite a little while.

The Sapsucker was with us for a long time this fall but left when the first real cold snap visited Washington, and this was the first I had seen of him for a month. The trees of our orchard, almost all, can attest to his presence for scarcely one has escaped his trade mark of closely, regularly placed bands of holes—so well illustrated in the accompanying cut.

Washington's Birthday, a mild though somewhat cloudy day, found us in quest of Fish Crows. We rented a boat and spent the morning rowing about Eastern Branch between the railroad and Anacostia Bridge. It is quite easy to distinguish the voices of the two forms. It is equally easy to tell the Fish Crow from the common member, when it is flying over the water, fishing. But it is quite a different matter to tell which bird is which when, gun in hand, you try to stalk them, a feat which is very hard to perform, since both species are very wary and suspicious. The efforts of the morning resulted in two common crows bagged, and fish crows still a thing of the future.

The warm weather had melted all the snow and the miniature lakes in the low fields were more attractive to them than the much hunted shores of the stream.

The bounding brush was alive with Song, White throated and Canadian Sparrows, and now and then a community of Snow Birds. As we lay quietly in a sheltered sunny place, many of these forms gathered about us. Even a fiery Cardinal and his mate came and stayed with us for a while. Occasionally a Song Sparrow would mount a twig, a little higher than the Alders, and make an attempt at song. Now and then the sun would come forth, full blast as it were, and show up the fleeting specks of snowy gulls in the distance. It was a day when one loves to lounge, to stretch and toss in idle watchfulness. A day when one instinctively listens for the hum of bees, in the willow, and looks to see them lift their caps from their downy catkins and spread these to the sun.

Sunday, March 4, was another pleasant day and found us astir. We paid a visit to a place, once our favorite, when we lived in Southwest Washington, the Potomac Flats. The Song Sparrow has recalled his half forgotten strains and repeats strophe after strophe, changing to another when tired of the one, to-day, to-day,

to-day, to-day. He forgets to say, *you come*, but changes and adds, to me, to me, to me, to me, to me, trill. His repertoire of strophes is great and frequently during mating seasons, he fuses these into a regular song, repeating tours or parts of them, just as the mood strikes him. At such times we become truly aware of the fact that "melodia" and Song Sparrow are aptly connected with this minstrel in white and brown.

On the right side of the median ridge, about a quarter of a mile east of the railroad track, we find the remains of what last fall was a dense tall thicket of rag-weed; here White-throated and Fox Sparrows skip ahead of us, seeking the shelter of the adjacent dense, low, willows which cover a great portion of the flats. We take a seat on one of the fallen poplars which once was a member of the rows which extended through the centre, and listen to the many voices about us. We are evidently being discussed but being too unattractive they all return to their business. Mr. Fox Sparrow is more than busy to-day, there are so many dead leaves, packed in ever so many places, each one of which must be kicked over before he can continue his journey to the north. He resembles the Towhee in this respect for he also is a great kicker. The ground which has been worked by a small community of Fox Sparrows, appears as if a flock of quails might have passed that way. Now and then one ceases work, leaves the ground for a while, and gives vent to a little of the happiness engendered by the returning spring in such sweet and powerful tones that we at once proclaim him a singer of a master type.

At 'een we visited Fort Stanton to watch the Sun set. On our return we pass Bryons Pond, a little body of water scarcely a rod in diameter but to-day more than full of life and interest; for Pickerings Hyla (*Hyla pickeringi*) and *Chorophilus feriarum* are revelling here in noisy comradeship. Were it day time one might expect to see a Red-head perched somewhere on the fence, for the voice of *Chorophilus* certainly resembles that species very closely. Hyla on the other hand gave vent to quite a series of sentences, all pitched in a high key, some of which sounded too much like ye-ap-yap, and ae-ap, ape, to suit our fancy. We therefore left these night warblers to enjoy their musical revel in peace.

SOME TRIALS OF A FIELD COLLECTOR.

BY EUGENE S. ROLFE, Minnewaukan, N. Dak.

In his search for birds and their nests and eggs, many interesting and amusing adventures are experienced by a zealous collector. A few selections from my own experience, may amuse the readers of the OSPREY. Four episodes follow.

SIXTY MILES FOR A GOOSE NEST.

In the spring of 1899, fifty miles out in a region heretofore unsettled except for widely separated cattle or horse ranches, I met a bright acquaintance who stated that a pair of Canada Geese

were nesting in a big slough near his place, some ten miles distant, and that if I would drive over he would point out the nest. The next day I made the drive over sand dunes, trackless prairie and stony hills, but a hard rain and night fell together before I could find the little primitive ranch buildings hidden in an obscure ravine and I was obliged to retrace my weary way to camp. Nothing daunted, I made the trip again next day, but found no one at home and, after prospecting about without success among a wealth of lakes, sloughs and marshes, I was

again obliged to return to camp. Having now the better part of two days and some forty miles of travel invested in this enterprise, I had little choice but to make a third effort, which I did next day, finding a herder on duty who, having been instructed by his employer to pilot me when I should arrive, readily proceeded to do so.

About a half mile from the ranch house, at the edge of a great, rushy, hundred-acre slough, we first descried the big, handsome gander doing sentinal duty and here we waded in. A heavy freeze the night previous (May 12th) had formed ice nearly as thick as plate glass and though with the advance of day this was now breaking up, we were hard put to it to save our waders from being cut through by the sharp edges. It seems the herder had never visited the nest in person and only knew in a general way that it was located somewhere in this particular slough, and it then became a matter of quartering that big expanse of marsh grass and thick bullrush till the sitting bird should be approached closely enough to frighten her from the nest, no light task in that icy water ranging in depth from the knees to the hip, counting the mud at the bottom which clogged the feet and made progress painfully slow. But, finally, from a mass of bent and flattened bullrushes of last year's growth, perhaps fifty feet from us, up rushed a fitting mate for the gander first seen. I judge either one of these birds would have weighed easily from twelve to fifteen pounds. The nest was simply a bowl-shaped depression in the mass of flattened rushes lined with bits of broken rushes and a mass of down, and contained seven eggs, much stained and near the hatching point. Considering the period of incubation four weeks, I concluded that this nest must have been made and eggs deposited more than three weeks before, while yet much snow lay on the ground, and before the marsh was free from the winter's ice.

Driving back toward the close of day, among the dry sand dunes some half dozen miles from camp, naturally dwelling somewhat on the virtues of perseverance, the "off" cart wheel suddenly set, the result of a "hot box", and it was not till I had found a pool of water, cooled the hot steel so as to make it possible to remove the wheel and daub on the axle some *bacon grease* from a left-over lunch, that I was able to proceed. It took fully six hours of patient labor to "blow" those eggs and separate the nest down from the rubbish lining among which it was entangled. The set and nest were collected for Mr. Morcom and, considering all the time, labor and trial involved, I trust he will be well pleased with them.

But besides landing the goose nest, I had on one of the trips located a pair of Sandhill Cranes that evidently were about to nest; but had opportunity to closely examine hundreds of Golden Plovers on their way to the far north, arrayed in their striking spring plumage, resting and feeding all about me on the burned prairie; had for a full half hour and at short gun range watched through the glass a pair of Marbled Godwits, as fine a species of shore bird as is to be found in the list, and had taken a highly marked set of eggs of the Ferruginous Rough-

leg from a nest among boulders on a big hill blackened over by fire in a strip of sterile, desolate country.

THE LOSS OF A CRANE'S EGG.

Much as I would have liked to remain in the vicinity till the Sandhill Cranes should prepare their summer home yet, as this was impracticable, I sought out a new Russian settler who had located his crude house of sod and mud about a mile away and, explaining to him the Crane situation, promised him a dollar if, later on, he should procure and bring or send to me in perfect condition the set of two eggs. The commercial spirit is strong in the breasts of these late subjects of the Czar and he readily accepted the terms. I mapped out for him on paper the exact location of the little strip of rushes selected by the pair, rehearsed for his instruction all my knowledge of the nesting habits of the species, impressed upon him the danger of causing the birds to abandon the spot before the full set of two eggs should be deposited, showed him how the eggs could be safely wrapped, and charged him to observe nest location and composition to the smallest details. Three weeks later he brought me *one* egg with an unfortunate dent near the greater end. In extenuation he said that following out my instructions carefully about a week after my visit he found the nest within a few feet of the spot designated by me and containing one big egg, and that he was so excited he seized the egg and hastened home with it and that on the way the mosquitoes stung so fiercely that in waving his hand about his head the egg came in contact with the butt of his gun. Later on he says he twice visited the nest to get the second egg but thinks "*the old bird never came back to lay it!*"

HOW THEY GET THEIR CIRCUS MONEY.

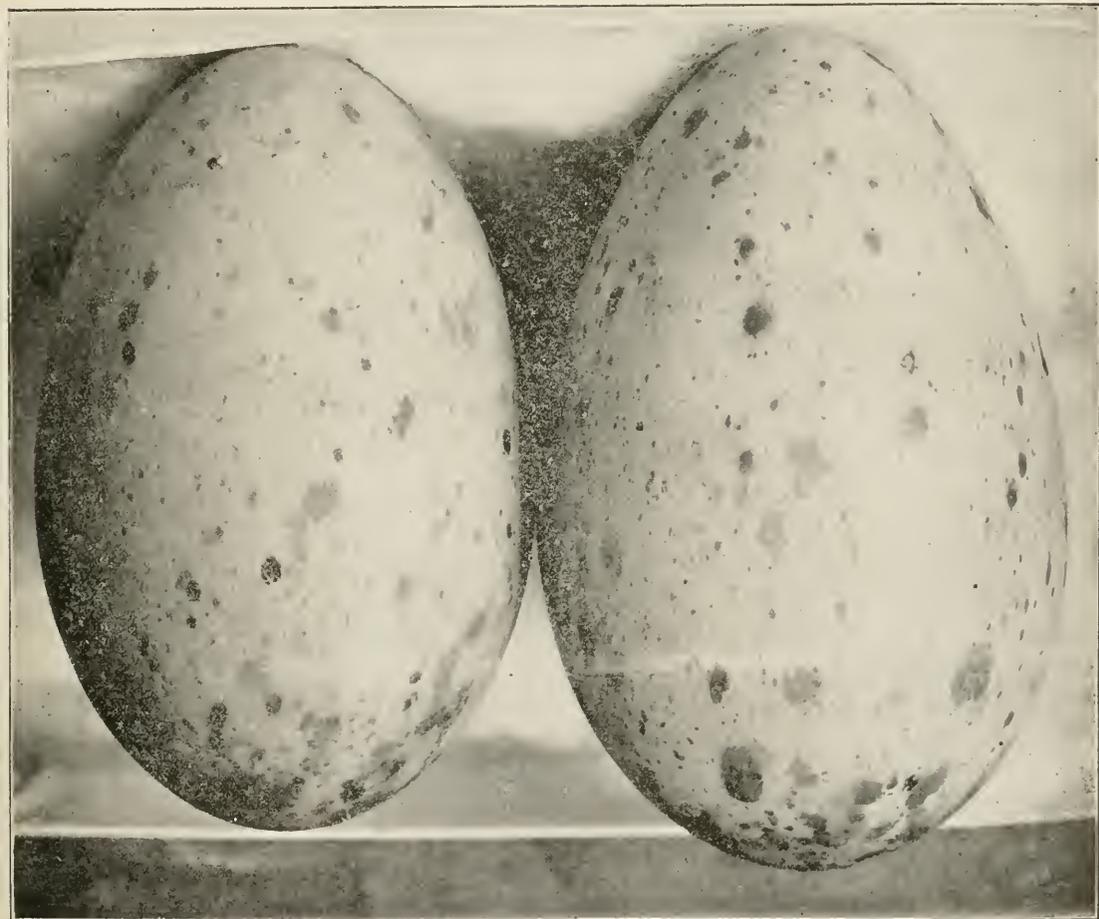
The other day I drove about ten miles to a point of land on the lake shore and drawing on my waders proceeded through the shallow water to the little flat island of which I wrote last year (*Osprey*, Vol. III, p. 83), when up from the thick weeds jumped a couple of well grown farmer lads. They had preceded me by a couple of hours and their remarkable take seemed to make it unnecessary to go over the island again. There were eggs of the Common Tern by the hundreds, and sets of Gadwall, Baldpate, Shoveller, Pintail, Mallard, Lesser Scaup and Teal, as near as could be judged, with a few eggs of Wilson's Phalarope and Spotted Sandpiper, all massed together in a great pile without any marking or attempt to preserve the integrity of the sets, nor could either boy name the species found except "gulls, ducks and snipe". Taking off their coats and spreading them on the ground the eggs were gathered into these, and they staggered away under their burden to the mainland. I asked what they were going to do with the eggs. One of the boys stated, "There's a fellow over at Devils Lake City that'll buy 'em and we're goin' over circus day".

A PAIR OF SMART WILLETS.

Another season has gone by and I haven't yet

personally located a nest of the Western Willet, the form found breeding here. I have a large pasture four miles out which I am compelled to visit every few days to guard against escapes and accidents to the stock. Near one end, at a small grassy pond of ankle-deep water I have been regularly greeted at every visit this year by a pair of Willets. It seems to me I have repeatedly,

though unsuccessfully, examined every tussock and blade of grass in and about that pond where the birds could possibly conceal their nest, but yesterday passing over the familiar ground I was fiercely assaulted by the pair, and there, underfoot, struggling through the grass were the lusty young, three in number!



EGGS OF THE SANDHILL CRANE OF NATURAL SIZE IN TRAY.

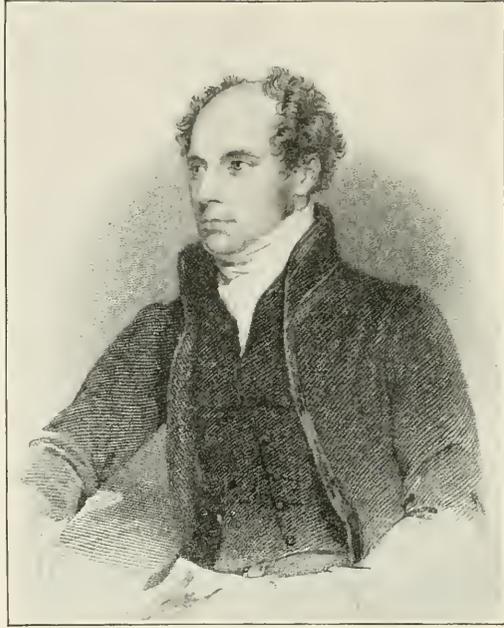
EGGS OF THE SANDHILL CRANE (*GRUS MEXICANA*.)

BY J. P. NORRIS, JR., Philadelphia.

I have been asked to describe the set of Crane's eggs collected by Mr. Rolfe represented in the accompanying illustration, and now in my collection.

The two measure 3.89 x 2.39 and 3.57 x 2.26. The ground color of the eggs is ashy yellow,

with a buff tinge, spotted and blotched more heavily at the larger end with reddish brown and gray; the latter faint and not readily noticed unless looked for. The smaller egg has a deeper ground color than the other.



WILLIAM SWAINSON IN 1840.

WILLIAM SWAINSON AND HIS TIMES.

BY THEODORE GILL, Washington, D. C.

INTRODUCTORY.

One of the most productive of ornithologists, and one who has contributed nearly as many if not more new generic names for the North American Avifauna than any other, was William Swainson. For this reason he becomes of special interest to American ornithologists. Another cause for interest is the strange philosophy which he imagined and zealously propagated. Still another, and that which will be to many Americans the greatest cause of interest, is the intimate intercourse which occurred between him and Audubon and, to less extent, between him and Rafinesque. So many delightfully gossipy details have come to light within the last few years of the intercourse of Audubon and Swainson that the latter has become the subject of renewed interest, and undoubtedly some of those details will be welcomed on Swainson's account, and still more on account of Audubon.

Those details give such a picture of the man and his surroundings as to vivify his life and give us an idea of the times and conditions which influenced him which nothing else could do in equal degree. It is believed, therefore, that they will be welcomed and appreciated by all ornithologists.

Swainson in his day enjoyed a high reputation as a learned and "philosophic" naturalist. He was even designated as the "British Cuvier"

and regarded as the "greatest zoologist" of Britain. In a notice of his "Preliminary Discourse on the Study of Natural History", published in 1834, in the Magazine of Natural History, (vol. 8, p. 238,) the Discourse is declared to be "the most lucid, complete and masterly introduction to natural history that has hitherto been published in any language." Further, it is declared, "the author was, before the appearance of this volume, deservedly regarded as the greatest zoologist Britain has produced; he may now fairly claim to be placed on an equality with the most esteemed, of any age or country."*

It is evident, from numerous passages in his works, that Swainson heartily endorsed this opinion, but doubtless considered that the title of "the British Cuvier" was somewhat derogatory. At any rate, jealousy if not ill will toward Cuvier is frequently manifest in his works. Cuvier is declared to have been "totally unacquainted with the very first principles of the natural system." As "the natural system" of Swainson was based on the concept of a magical number and a circle the statement is perfectly correct, but the charge, instead of involving discredit to Cuvier, involves praise; Cuvier, indeed, frequently exposed and ridiculed arithmetical and so-called philosophical classifications.

Swainson† claimed to have "characterized more new groups unnamed among the verte-

*Magazine of Natural History, vol. 8, p. 238, 1835.

†Natural History of Fishes, etc., II, 358.

brate animals than all other naturalists of this country [Britain] put together", and that "out of between one and two hundred which [he] thought it necessary to name, not one has been admitted which did not bear upon [his] primary object, that is, of distinguishing one type of form from another."

Materials for a knowledge of his character and career exist in an autobiographical memoir in his "Taxidermy, with the Biography of Zoologists", and in an obituary notice in the Proceedings of the Linnean Society of London. These have been drawn on for a notice by G. S. B. (Boulger) in the "Dictionary of National Biography" (vol. 55, p. 192, 193).

Swainson, unconsciously paraphrasing a verdict of the great English biographer of the last century,* apologizes that while it "cannot be otherwise than egotistical," autobiography is "the most authentic of all records" for information of one's life. His own autobiography is interesting and lets in light on his character. He wished, too, to have it widely known.† Nevertheless, another treatment of the subject matter may be more useful and such we venture here to give.

The biographical sketch given in the "Dictionary of National Biography" is reproduced because the data given by Swainson are well condensed and because it may interest as a sample of the method pursued in the compilation of the great British work.

But materials for understanding and appreciating Swainson appear in a quarter not hitherto exploited. Audubon made the acquaintance of Swainson not long after his first arrival in England, and soon became intimate with him. In his journals published nearly three years ago (1897) by his talented grand-daughter, Miss Maria R. Audubon, some interesting entries record various episodes of the intercourse of the two. These, throwing light on both of our naturalists, are herein reproduced in part.

Besides these sources of information sundry details have been found in various works of Swainson referred to in their proper places, certain controversial articles, and the life and travels of Rafinesque.

The very words of Swainson and Audubon for their various statements are repeated when such could be done without detriment to the continuity of the narrative. The advantages of such a course are too obvious to need defence or apology.

BIOGRAPHICAL SYNOPSIS.‡

William Swainson (1789-1855), naturalist, was born on the 8th of October, 1789, at Liverpool, where his father, who died in 1826, was collector of customs. His family had originally been "statesmen" at Hawkhead in Westmoreland; but his grandfather had also been in the Liverpool custom-house. His mother, whose maiden

name was Stauway, died soon after his birth. At fourteen he was appointed junior clerk in the Liverpool customs; but to gratify his longing for travel, his father obtained him a post in the commissariat, and in the spring of 1807 he was sent to Malta, and shortly afterwards to Sicily, where he was mainly stationed during the eight following years. Before going abroad, he drew up, at the request of the authorities of the Liverpool museum, the "Instructions for Collecting and Preserving Subjects of Natural History" (privately printed, Liverpool, 1808), which was afterwards expanded in 1822 in his "Naturalist's Guide" (London, 8vo.; 2nd edit. 1824). While in Sicily he made large collections of plants, insects, fish, and drawings of natural history objects, visiting the Morea, Naples, Tuscany and Genoa. On the conclusion of peace in 1815, he brought his collections to England, and retired on half-pay as Assistant Quartermaster General. In the autumn of 1816 he started for Brazil with Henry Koster. A revolution prevented their penetrating far into the interior, and Swainson devoted himself mainly to collecting birds in the neighborhood of Olinda, the Rio San Francisco and Rio de Janeiro. Returning to Liverpool in 1818, he published a sketch of his journey in the "Edinburgh Philosophical Journal", and devoted himself to working out his zoological materials. At the suggestion of his friend William Elford Leach of the British Museum, he learnt lithography, so as to make drawings of animals suitable for colouring, and in 1820 began the publication of "Zoological Illustrations" in which the plates are by himself (3 vols. 1820-3, with 182 coloured plates; 2nd ser. 3 vols. 1832-3). After five years' residence in London, Swainson went, on his marriage in 1825, to live with his father-in-law at Warwick, and, not receiving as large an access of fortune as he had expected on the death of his own father in 1826, he adopted authorship as a profession. He partly revised the entomology in London's "Encyclopædia of Agriculture and Gardening", and arranged a companion Encyclopædia of Zoology. This plan was, however, merged in Lardner's "Cabinet Cyclopædia", to which Swainson contributed eleven volumes from his own pen, published between 1834 and 1840, besides one on "The History and Natural Arrangement of Insects" (1840), written in conjunction with William Edward Shuckard. In preparation for this series of works he visited the museums of Paris in 1828 under the guidance of Cuvier and Geoffroy St. Hilaire, and, to be within reach of London, settled at Tittenhanger Green, near St. Albans. From the first he adopted a quinary system based on the circular system of William Sharp Macleay, and several volumes in the "Cabinet Cyclopædia" series are devoted to elaborate expositions of these extremely artificial but professedly natural systems of classification in various groups of

*Johnson in the Idler quoted by Boswell in the introductory chapter of his first volume.

†In the Literary Gazette for August 8, 1830, in a notice of Swainson's Taxidermy, we are told that "perhaps the amusing and frequent illustration of his character is to be found in the autobiographical sketch of himself, which he has not only included in this portion of his volume, but induced his publishers to forward on a separate sheet with the subjoined note:

"Messrs. Longman, Orme, and Co., will feel particularly obliged if the Editor of the [blank] will permit the above Autobiography to appear in his columns at the first suitable opportunity."

‡39 *Paternoster Row*, July 29, 1840."

†Extract from Dictionary of National [English] Biography, vol. 55, p. 192, 193.

animals. Besides writing that portion of Sir John Richardson's "Fauna Boreali-Americana" that relates to birds, with Introductory "Observations on the Natural System" printed separately, and furnishing the article on the geographical distribution of man and animals in Hugh Murray's "Encyclopædia of Geography", Swainson contributed three volumes to Sir William Jardine's "Naturalist's Library", one dealing with the Flycatchers (vol. xvii. 1835), and the others with the Birds of Western Africa (vols. xxii. xxiii. 1837). In 1837, having suffered pecuniary losses, he emigrated to New Zealand. On the voyage out he lost a large portion of his collections; but he took advantage of touching at Rio to take various plants to his new home to naturalize. In 1853 he was engaged by the governments of Van Diemen's Land and Victoria to report on the timber trees of those colonies. Swainson died at his residence, Fern Grove, Hutt Valley, New Zealand, Dec. 7, 1855.

Swainson was elected a fellow of the Linnean Society in 1816 and of the Royal Society, on the recommendation of Sir Joseph Banks, in 1820, and he was also a member of many foreign academies. By his first wife, a daughter of John Parkes of Warwick, whom he married in 1825, he had five children, of whom four sons survived him, and by his second wife, who also survived him, he had three daughters. An engraved portrait of him by Edward Francis Finden, from a drawing by Mosses, forms the frontispiece to his volume on "Taxidermy" in the "Cabinet Cyclopædia." His collection of Greek plants is in the Herbarium of the Liverpool Botanical Garden.

As a zoological draughtsman Swainson combined accuracy with artistic skill, and his papers in the "Memoirs of the Wernerian Society", Tilloch's "Philosophical Magazine", the "Journal of the Royal Institution", London's "Magazine of Natural History", the "Magazine of Zoology and Botany", the "Entomological Magazine", and the "Papers of the Royal Society of Van Diemen's Land", of which thirty-six, dealing with ornithology, conchology, entomology and trees, are enumerated in the Royal Society's "Catalogue" (viii. 893), contain descriptions of many species new to science.

Besides the works already mentioned, Swainson was the author of [many others].*

HIS PERSONALITY.

Swainson was a rather good-looking man of medium height, with blackish curling hair which early deserted his front and crown; his features were regular; his face rather weak; sparse side whiskers were cultivated. He affected a clerical or quaker garb and manifested strong religious tendencies.

He was withal a very vain and irritable man and of a "peculiarly nervous temperament", as he himself recognized. He was also troubled with a jealous disposition and thought that the world did not do justice to his merits. A long nour-

ished grievance was that he did not enjoy government aid or patronage. He was prone to contrast the want of scientific patronage in England with its manifestation on the continent. The decay of science in England was also a favorite theme. He confessed that his "education was unfinished", as might have been naturally expected from his statement that he "showed not the least aptitude for the ordinary acquirements of schools", and yet left school and entered office "at the early age of fourteen."

He suffered from "an impediment of speech", which he attributed to his "peculiarly nervous temperament"; this, he claimed, "acted as an insuperable bar to the acquisition of languages". Why such an impediment should be a bar to the acquisition of a language is left to us to conjecture; utilization is a different matter. However this may be, Swainson's knowledge of languages was evidently very limited, as we learn from Rafinesque and Audubon and from internal evidence furnished by his works. Although critical of scientific names proposed by others and prone to give what he considered to be better, many, if not most, of the numerous names he coined, are objectionable for one reason or another.

For example, he coined such words as *Canthileptes* and *Canthigaster* when he should have written *Acantholepides* and *Acanthogaster*, and many others equally bad. His inconsistency was sometimes remarkable and made prominent by juxtaposition of names. Thus, he rejected *Nycticorax* (because the Greek Korax primarily meant Raven or Crow), and substituted for it the hybrid name *Nyctiardea*; and directly next to it he added a genus which he named *Tigrisoma*. Why "Night crow" should be worse for a heron than "Tiger's body" would not be plain to most persons. He might have learned also that Korax had of old been used in a wider sense than Raven or Crow, and that there was a good precedent for taking the word as Bonaparte had done (from Linnaeus). No less a man than Aristotle had designated under that name a water bird as large as the Stork. The complicity had also a classical precedent in the name *Phalacrocorax*, another one, by the way, which Swainson refused to admit. Notwithstanding these facts *Nyctiardea* was allowed for a long time by American ornithologists to supersede *Nycticorax*, but it was on account of supposed preoccupation of the latter name, and not because they adopted the principle indulged in by Swainson.

Again, a fish having a superficial resemblance to another generally known as *Chromis* had received from Rüppell the suggestive name *Pseudochromis* (False Chromis); Swainson could not tolerate such a name, and gave instead the hybrid one *Labristoma* (Wrasse-mouth), though it was not a Wrasse's mouth nor did it have a mouth at all like that of a Wrasse.

He was, withal, a man of estimable character in many respects. He was conscientious and attempted to live up to his ideas of what was

*The works mentioned are designated more fully at the end of the present biography. The discrepancies between the sketch in the "Dictionary of National Biography" and the statements made in the present have been taken cognizance of and the statements hereinafter made verified.

right. He appreciated just treatment and fair dealing, and met such with a proper spirit. His long and uninterrupted friendly relations with his publishers, and with Richardson are sufficient evidence of this. He had what is generally known as "a good eye", and could appreciate generic and specific characters in groups with which he was familiar fairly well. He had a nicely developed artistic sense, and often sought relief in his pencil and brush from his pen. He exercised a judicious criticism of his own drawings as well as of those of others. Moreover, he was gifted with the genius of methodical industry. His long list of works attests to this. In the various fields in which he wandered, he did not allow taxonomic rocks to delay his progress: he was content to skip over them — when he noticed them. In fine, he would have secured a much higher regard in scientific literature had he not been afflicted so severely with a monomania — quinarianism. Notwithstanding, as an ornithologist he must ever be conceded a high rank among those of his time.

SWAINSON'S YOUTH.

Swainson "showed not the least aptitude for the ordinary acquirements of schools". Consequently he was allowed to leave school and his "education, in fact, from unavoidable circumstances, was left unfinished." At the age of fourteen he "was appointed junior clerk in the Secretary's office" of the custom-house of Liverpool, his father holding the position of Secretary, and with his appointment was "a salary of 80lb [nearly 400 dollars] a year." Although he had thus "entered public life" with "prospects of rapid advancement which might well be envied," he "had not the least inclination to pursue them. He was, notwithstanding all, "wayward and unhappy." His inclinations led him and directed him away from his duties and business and developed into a desire for rambles in the country and for collecting objects of natural history. His "father had a collection of British insects and shells, and these had given" him "not merely a taste, but a passion, for natural history even when a mere child, and every moment" he "could command was divided between drawing and collecting." It was in vain that his "parents endeavoured to repress this ardour, and to make these tastes subordinate: their judicious restraints only increased the evil: sleeping or waking", his thoughts were constantly bent on how he "could get abroad, and revel in the zoology of the tropics." His imagination was especially excited by the perusal of Smeathman's notes on the Insects of Africa in Drury's Illustrations of Entomology. He thought that "no earthly happiness could be greater than visiting Sierra Leone, and capturing thousands of butterflies; or going out to some distant country, even to collect for others. With such wild and uncontrolled ideas, it cannot be supposed," he admits, that his "official duties were performed as they should have been." A position more consonant with his predilections was sought for. The struggle of Britain with Napoleon was then raging and a position in the army was not difficult to be secured. The elder Swainson was well acquainted with the Commissary General

(Wood) who "was about proceeding to join the Mediterranean army", and through his intervention the young man was "placed on that establishment by a Treasury minute". His "situation in the customs" was consequently "resigned". He was then in his eighteenth year.

SWAINSON IN SICILY, ETC.

Soon after his appointment Swainson "sailed for the Mediterranean, in the suite of the Commissary General," and first stopped at Malta. After "a short stay" there, they "proceeded to Sicily in the spring of 1807. Most of his time, for eight years, was destined to be spent in that island. The British army then merely garrisoned the island, "without undertaking any very decided operations against the French, who were in possession of all Calabria. Hence", he says, "our duties were comparatively light; we lived in comfortable quarters, and enjoyed much leisure: this continued with very little intermission for several years, during which I alternately investigated the zoology and botany of that charming island." Charming though it was, it was not all he looked for: his "expectations of Sicily, as a field for zoological research, had been somewhat disappointed; it is a perfectly woodless country, and almost destitute of permanent rivers." He nevertheless found it a pleasant country for exploration and took many long jaunts. He was especially struck by the many lizards which "on a fine sunny day may be seen in a single walk, basking on the stones and walls, or pursuing their search after insects. These lizards (the species was *Lacerta agilis*) were "particularly numerous, and very beautiful. The habit they have of turning the head on one side, and some vague recollection of a story in the Arabian Nights, about an attentive lizard, first induced us", says Swainson, "to try what effect the humming of a song would have upon those creatures, and it was really most entertaining. The little reptile, instead of running away with its usual swiftness, would remain perfectly still, inclining its head on one side, as if to drink in every intonation. The softer and more plaintive was the tune, the more intense was the attention it evinced: and if a whistle was substituted for a hum, it would suffer itself to be approached so near that any one unacquainted with its astonishing swiftness would fancy he could capture it with his hand. This curious fact, once discovered, often proved a source of much amusement. Often, after a long ramble, spent in sketching or botanising," says Swainson, "we used to repose in a shady spot, among the rocks, and charm these pretty little creatures so successfully, that we have known them even to come out of their holes, and thus form a little audience. On such occasions, they sometimes stand remarkably upright upon their fore legs, the hinder ones lying almost flat upon the ground; the same attitude they also assume when reconnoitring; but then the head is never turned on one side, as if for the purpose of accurately hearing." Swainson concludes, "every one is aware that this [fondness for tunes] is equally evinced by birds; but we be-

ieve that nothing of the kind has yet been observed among quadrupeds.*

Another interesting observation is recorded by Swainson. Apropos of the fact that Moffat—very gratuitously—attributes plithiriasis “to the free use of goat’s milk,” Swainson aptly adds that he was “no doubt ignorant that a large portion of the peasantry of Southern Europe know no other milk than that of goats. In Sicily, more especially, such is the fact; for,” says he, “during eight years’ residence on that island, we scarcely remember to have tasted the milk of cows more than once or twice”†

Swainson was not entirely confined to Sicily during his eight years’ sojourn. “An annual leave of absence of six weeks or two months”, he says, “enabled me to visit Greece—the botany of which classic region had been rendered more interesting from the appearance, about this time, of Dr. Sibthorp’s *Prodromus*” (1806). This country contrasted greatly with Sicily. “The beautiful little streams which meander through the Peloponnesus, have their banks constantly moist and verdant; hence plants and insects abound”‡

This visit to Greece must have been made in 1813, and been from Malta where he was then stationed for a time. The date is determined by his reference to the plague; that fell disease invaded Malta in the year mentioned.§ “He had scarcely returned to Malta when the plague broke out in the capital.” His account of his quarantine and the way he used his enforced leisure may be of interest now when the fear of the disease is in many minds.

The quarter in which I resided, says he, “was one of the most affected; the street was barricaded, and for near two months I was a complete prisoner. Provisions were brought in by the authorities, and received into the house by an opening cut through the door. At last it became so destructive, that the cart which conveyed the dead away, came round to be filled every day, and it was no uncommon spectacle, upon rising in the morning, to see half a dozen dead bodies laid on the pavement, on both sides of my own house, ready to be removed. I know not how it was, but I felt more dismay on the first death by this scourge, than by the subsequent horrors of such fearful sights. Confined to the house, with only one domestic, I substituted, for my usual daily exercise of walking and riding, that of carrying some loose stones left in the yard by the masons, from thence to the top of the house, and then down again. I thought seriously; placed my trust in that Providence which had hitherto preserved me; and felt not only resigned, but perfectly tranquil, to whatever might happen. This imprisonment enabled me to finish many of my Sicilian and Grecian sketches, and arrange the plants and animals. In short, I was almost sorry, on my own account, when our street was released from quarantine, and I had again resumed my official duties.

INTERCOURSE WITH RAFINESQUE.

While in Sicily he saw much of Rafinesque and was his “companion in excursions” into the fields and mountains. The two men that have been united under a yoke of common contempt by a modern ichthyologist|| were early bound by friendly union and common sympathy for nature. On such excursions, Swainson “carried a butterfly net to catch insects, and was taken for a crazy man or a wizard.” (Rustics rarely or never comprehend how a sane man should take interest in nature except for gain!) As Swainson “hardly spoke Italian,” Rafinesque “had once to save him from being stoned out of a field, where he was thought to seek for a treasure buried by the Greeks.” Although so little acquainted with Italian Swainson nevertheless in 1810 “supervised the printing at Messina of [Rafinesque’s] Index of Sicilian Ichthyology,”¶ a work destined in after years to give much trouble to ichthyologists.

Swainson undoubtedly profited by his intercourse with Rafinesque. Rafinesque was about 6 years older than himself, having been born in Galata, a suburb of Constantinople, in 1783. He had made his first visit, extending from 1802 to 1805, to the United States, and had been a resident in Sicily since the last year. He was a man of decided genius for natural history, and had a mind of his own—-independent and vigorous, but very unbalanced. He refused to be bound by the trammels of the Linnæan school, and doubtless familiarized Swainson with the idea of dissent from that school. Swainson had imbibed the idea of Linnæan wisdom from his closest zoological friend of eminence, Sir Joseph Banks, and all England, in the early years at least of the first decade of the century, bowed to the authority of the great Swedish naturalist and tried to force new species into Linnæan genera. The confusion entailed thereby was great and increasing with the accumulation of species. Swainson could not but be impressed by instances which Rafinesque brought to his attention. At least, he must have been led to think.

PEACE AND RESIGNATION.

The long Napoleonic struggle neared its end. At last the French were obliged to retreat from territory they had possessed for years. One of the vacated lands was Italy. “The withdrawal of the French from Italy, by the united operations of [the British] troops with those of Austria, required my services”, says Swainson, “with the army in Naples, and I had thus an opportunity of treading the soil of Italy”.

Let him give his own version of what followed and the reasons that influenced him in his actions.

(To be Continued.)

*Habits and Instincts, p. 47.

†Habits and Instincts, p. 209.

‡Taxidermy, p. 340.

§Faullner on the Plague in Malta, 1820.

¶Günther in Nature for February 15, 1900, p. 363.

||Rafinesque in “A Life of Travels and Researches in North America and South Europe (1836) p. 41, 42.

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Comments.

BIOGRAPHIES OF ORNITHOLOGISTS.

In the postscript Introduction to the last volume of the OSPREY, we indicated that we intended to give in future numbers biographical sketches and accompanying portraits of various ornithologists and especially of such as had elucidated the ornithology of America. We promised to give the biography of William Swainson, then already mostly prepared, as soon as more urgent matter permitted. Meanwhile, we have published the likenesses of the lately deceased Doctor D. Webster Prentiss and Professor Othniel P. Marsh. For a capital summary of the latter's life and writings we have been indebted to his successor at Yale, Professor Beecher. We are at last ready to redeem our promise and give the biography of Swainson. This is commenced in the present number.

Swainson was at one time so prominent as an ornithologist, covered so wide a field in ornithology, and did so much bearing on the ornithology of America that we have given an unusually long account of his life and career. In some respects he was a very interesting character and a number of entertaining episodes connected with his life are given in various works. We feel assured that the readers of the OSPREY will not grudge the space given to him but, on

the contrary, will feel indebted to us for furnishing them the opportunity to know more of so remarkable a man.

The intercourse of Swainson and Audubon was especially interesting and its details have only been known to us within the last three years by the publication of Audubon's memoirs by his grand-daughter. This narrative will convey a vivid idea of the two men and their surroundings, as well as of the times in which they flourished and the men that flourished with them.

The biography of Swainson will extend through four numbers of the OSPREY. This will be longer than most others at least, as we will be unable to spare anything like equal space to the great majority of the other subjects whose portraits will be given.

We have already had engraved portraits of a number of other American ornithologists which will be given in due time. Among them are those of Sir John Richardson, Thomas Nuttall, Spencer F. Baird, John Cassin, Thomas Wilson, Elliott Coues, Henry Bryant, General George A. McCall, and various others who have been pioneers in American ornithology. The next biography probably will be that of Dr. Coues whose recent death has been such a loss to us.

MERCANTILE VALUE OF EGGS.

An inquiry appears in the present number of the OSPREY from a perplexed correspondent who wants to know the basis for the valuation of some eggs—why are the eggs of the Great Auk so much more esteemed than those of the *Apyornis*? The former bird has become extinct within the time of men still living; the latter probably became extinct when man had barely developed into his present form. Yet an egg of the Auk will command bids for considerably over a thousand dollars at auctions while the latter will not fetch much more than one or two hundred dollars.

Mr. Lucas has indicated the reason in a reply to our correspondent. It is a matter of fashion! Collectors of birds and bird eggs, like other beings, take to "fads".

The impulse to collect something or other—to accumulate—to hoard—is implanted to a greater or less extent in every human being—even the spendthrift. Probably in none is the instinct absolutely wanting. It is an instinct indeed of vital importance to man. The manifestation of that instinct is multiform. One of its forms is visible in the naturalist-collector. In some cases, it becomes what is known as a fad,

Three main elements determine the extent of development of a fad. Of course there are first of all the fundamental principles of supply and demand at the bottom. Then there is what may be designated the cause of desire. The desire to possess is influenced by various considerations. In the case of the Auk's eggs, the sequence is essentially as follows.

In Europe there are numerous collectors of birds and, in addition, collectors of bird eggs. Many who are deterred from collecting skins on account of the troubles and care incident to keeping skins take to eggs. The eggs are clean, can be stored or arranged well, are sufficiently uniform to appear well together and yet sufficiently varied to relieve monotony. The collector generally limits his endeavors to a special field—the entire European continent or a more or less restricted portion of which the capitol is his own home. The number of species then is limited. Most of them can be obtained for small prices or through slight personal exertion. The more difficult acquisition becomes, the higher grows the price. Now, in the case of the Great Auk, the bird is dead and the only eggs to be had are those that were collected some half a century ago or more—generally considerably more. As there are many who want to have the eggs of all European birds, and as wealth increases and wealthy collectors increase the competition to get an egg or eggs—some are by no means content with one—entails high prices. The competition is sufficient to run the prices up into many hundreds of dollars or—the sales generally occur in England—hundreds of pounds.

But the competition is not limited to those who want to complete collections of eggs. When objects become so famous and sought after as Auk's eggs, another class want them. Those persons who seek for what is curious and rare enter into rivalry. They do not care in the least for the eggs as eggs, but they want them because they have an indefinite great value and are widely known to have such value. They rank them as curios; consequently the genuine egg collector has to pay an enhanced price.

With respect to the eggs of *Æpyornis* or the *Dinornithids* of New Zealand, there is no such

demand. An egg of one of those long extinct birds is not necessary to complete any gentleman's collection, no fashion to collect them has been developed as yet, and therefore the price is limited by a small demand. It may not be always so, but it is at present.

From not appreciating these facts, very high prices may be demanded for eggs for which there is little sale. Only a couple of weeks ago, an offer of an *Æpyornis* egg was made to the United States National Museum with a demand of 1,500 dollars for it. The number of the OSPREY for February containing the last quotation happened to come into the hands of the authorities just in time to give an answer without the trouble of inquiring further.

GREAT AUK IN UNITED STATES NATIONAL MUSEUM.

Apropos of the Great Auk, it will doubtless be news to some of the readers of the OSPREY that the species is fairly represented in the United States National Museum. There is a well mounted skin of an adult male obtained from the late Herr Wilhelm Schluter of Halle, and said to have been killed at Eldey, June 1834; there is an egg obtained from the Academy of National Sciences of Philadelphia, and by the latter secured from the DesMurs collection; finally, there is a fine lot of skeletons and separate bones. Indeed, one of the best collections (if not the very best) of skeletons and parts of skeletons of the Great Auk extant is in the Museum, and was obtained by Mr. Lucas who has published the results of his "Expedition to Funk Island" in the Annual Report of the Smithsonian Institution for 1887—8 (Museum, p. 493-529, pl. 61-63). Mr. Lucas and his party exhumed "thousands of bones, and yet this great number will 'make up' not more than a dozen skeletons." Separate bones are valuable however. Over fourteen hundred specimens of the humerus were secured.

A list of all preserved skins, eggs and skeletons known up to the date of publication was given by Mr. Symington Grieve in his work issued in 1885, entitled the "Great Auk or Garefowl (*Alca impennis* Linn)."

Letters.

WASHINGTON, D. C., March 3, 1900.

ANSWER.

EDITORS OF THE OSPREY:

I see with surprise in the last number of the *OSPREY* that the egg of an *Aepyornis maximus* was sold for only forty-two guineas. Was it imperfect? or why should it have commanded no higher price? The eggs of the Great Auk have been sold repeatedly, I believe, for considerably more than a thousand and even nearly fifteen hundred dollars, I understand. What is the basis of value in such cases? The *Aepyornis* has been extinct for an immeasurably longer period of time; its eggs, I presume, are much rarer and certainly they are much larger. Why, then, are they not worth more than the Great Auk's?

Yours respectfully,
F. M. STUART.

Eggs of the Great Auk bring much larger prices partly because they are offered for sale just often enough to stimulate competition, but principally because the possession of an egg of the Great Auk has become a fad among wealthy collectors. There are more than eighty Great Auk eggs in existence while probably not more than a dozen really good specimens of *Aepyornis* eggs have been obtained. And yet the former bring from \$900 to \$1,200 at auction while the price for the latter range from \$180 to \$210. There are many birds much rarer than the Great Auk, but probably none about which so much has been written and in which there is so much general interest.—F. A. L.

Notes.

A NEW FOSSIL BIRD FROM THE EOCENE OF WYOMING has been made known by Dr. Charles R. Eastman in the *Geological Magazine* (London, February 1900, p. 54-57, pl. 4.) It was collected from the middle division or fish-bearing shales of the Eocene near the town of Fossil, and the skeleton is in unusually good condition. It was about "the size of a gallinule, rail or small coot," and resembled "these forms in general characters." Nevertheless the bird "cannot be brought into strict agreement with any modern ornithic family, but appears to be transitional between true gallinaceous birds and the groups typified by coots, rails and gallinules. With the last named, the skeleton exhibits a number of features in common, and there is also some resemblance to curassows." The new form has received the name *Gallinuloides wyomingensis*. We wish that a less descriptive and misleading name—not a hybrid, too—had been selected. We are, however, obliged to Dr. Eastman for making the form known, but it will remain for some one well acquainted with avian osteology and gifted with true taxonomic instinct as well as time to apply them to the interpretation of the relationship of the fossil. It seems to us to be more neatly related to the curassows.

Since the above was written we have received information respecting the specimen from Mr. Lucas. This specimen has been studied in some detail by Mr. F. A. Lucas and the results will be given in a forthcoming *Bulletin of the Museum of Comparative Zoology*. His conclusions are that the bird is most nearly related to the Curassows and to the genus *Ortalis* among living species. There are, however, peculiar characters which render it necessary to place the birds in a new family of the *Alectoropodes*.

ORNITHOLOGY OF A STREET CAR. Of the ten lady passengers who occupied the car with me this morning seven had their head-dress adorned with the mangled corpses or parts of such of the

following birds: One grebe's skin, one wings, at least a half a dozen dyed black; one contained the motley assemblage of an immature Black tern, Crow secondaries and Trogon tail feathers; three were decked with Ostrich plumes, and from one—a modest little bonnet in black, well suited to the peaceful features of the elderly matron—there moved a bunch of the dainty little egrets in the morning breeze. It was too bad; all the tenderness of voice was drowned by the cries of baby birds furnished for just this adornment of her bonnet. How I wished to say to her what the little plumes told me! Of the remaining three, two were plain and the other was decked with floral impossibilities.

It seems the percentage of bird-trimmed hats is far too great, and that the Audubon Society will need continue its mission for many a year to come.—BARTSCH, Tuesday.

A NOTE ON A LONG-TAILED BREED OF FOWLS in Tosa, Japan, has been published recently (December 1891,) by Basil Hall Chamberlain in the *Transactions of the Asiatic Society of Japan*, (vol. 27, 5 p. with 2 plates). Four main varieties are cultivated in Japan—*Shira-fuji*, with white head and body feathers and gray legs; *Haku*, white all over with yellow legs; *Totenko*, with red neck and body feathers; and *Dokiri*, reddish mixed with white on body. All except the *Haku* have black tail feathers. The extreme to which the tail feathers grow is 18 feet, but "12 feet is a rarity;" the usual extent is 7 to 11 feet: "They grow about 4 inches a month, and continue to grow while the bird lives, which may be 8 or 9 years." The shoulder feathers "reach a length of 4 feet. Some of these may fall off in moulting, but the tail feathers never do." The cocks command a relatively high price in Japan; one with feathers under 10 feet long is valued at about \$15; one with the feathers over that length is worth about \$25. In some places they command still higher rates. A hen, however, may be bought for as little as a dollar and a half.

Many more interesting data are given by Mr. Chamberlain. A fine example of this variety is in the National Museum.

THE DEATH OF EMILE BLANCHARD removes a naturalist who had cultivated ornithology chiefly from the anatomical side: this occurred on the 11th of February, 1900. He had been for many years Professor in the Museum of Natural History, was a member of the French Academy of Sciences (section of anatomy and zoology) and had been a president of the academy.

Professor Blanchard's work was principally in the line of entomology and helminthology,

but he contributed some valuable articles on the anatomy and classification of birds, especially of the parrots and gallinaceous forms. A good resume (so far as published) of the anatomy and classification of birds in general was also given by him in "L'Organisation du Règne Animal." Unfortunately, however, only three parts relative to the birds were published. This ornithological work was published many years ago (1856-1860). His views respecting the classification and relationship of different birds were in advance of his time and evoke regret that he did not continue his work as contemplated.

Literature.

THE BIRDS OF AFRICA. By G. E. Shelley, F. Z. S., F. R. G. S. Vol. ii, Part i. London: R. H. Porter.—The part of this important work just published includes the Passerine birds of the families *Pittidae*, *Philepittidae* and *Nectariniidae*. There is one *Pitta* (*angolensis*) widely separated from its numerous oriental relatives, and two of *Philepittidae*—the only ones known and confined to Madagascar. The *Nectariniidae* or "Sunbirds are strongly represented throughout the Ethiopian region, but none of the species found there extend into Asia beyond the shores of the Red sea." There are seven well drawn and beautifully colored plates representing ten species of Sunbirds, and five of Zosteropids to be described in the next number.

The Oscines, we are told, "are well represented in the Ethiopian region by nearly 1,500 known species," and constitute "more than half the Avifauna of that region."

BIRD NOTES AFIELD: A series of essays on the Birds of California. By Charles Keeler. D. P. Elder & Morgan Shepard, San Francisco, publishers. 1899. [12mo. pp. i-viii, 1-355; price \$1.50.]

In this modest looking volume Mr. Keeler introduces the reader to California's avifauna. The text is divided into 14 chapters, viz: A first glance at the Birds; Patrolling the Beach; A Trip to the Farallones; A Day on the Bay Shore; A glimpse of the Birds of Berkeley; January in Berkeley; February in Berkeley; March in the Pine Woods; April in Berkeley; Berkeley in May; Summer Birds of the Red Woods; Nesting Time; A Mission Patio. Appendix.

In the first chapter Mr. Keeler takes the reader on various rambles and makes him feel that he is indeed a member of the party. We visit the ocean beach in calm and storm and interpret old mother Nature in all her moods. We take a turn to the Farallones inspecting the

homes of the feathered denizens. We climb the mountains and walk in the shadow of the awe inspiring giant redwood. We spend an entire year among the Berkeley Hills.

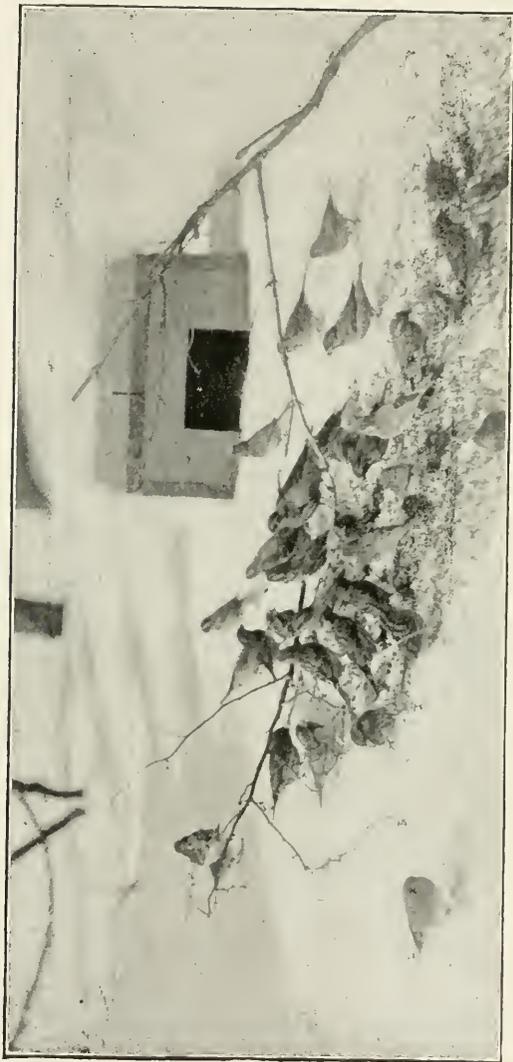
We are afield and every where the birds are in the foreground. He paints them in their native haunts in a frame of rustic nature. The book throughout is alive. Nothing of the odor of bird skins and preservatives is present nor do we get a glimpse of gun or bloody scalpel.

The appendix or last chapter is intended to furnish the reader a means to become acquainted with the land birds of California. Even here the creaky wheels of classification have been happily adjusted and the various keys and simple descriptions will enable any one of average intelligence to designate any of the 204 species here described.

We congratulate Mr. Keeler upon the production of this popular treatise which fills a long felt want of the Gold state bird lover, and hope the publisher will find a better coat for the second edition.—B.

THE BIRDS OF AMERICA by Audubon, 1840-1844, (princeps royal 8vo. edition,) in seven volumes half morocco, with "the text somewhat spotted", was sold at auction by Bangs & Co. of New York, January 15th, for \$176.75.

A CATALOGUE OF NESTS AND EGGS OF THE BIRDS OF AUSTRALIA, by Mr. Alfred J. North, was published by the Trustees of the Australian Museum of Sydney, New South Wales, in 1889, as one of the series (No. 12) of catalogues of their museum. This has been "out of print" for some time, and a new edition will be published soon. This work will be illustrated by 30 plates representing about 600 eggs. Provision will be made to furnish colored plates to those who wish them, and are willing to pay the extra price.



Purple Finches and Snow Birds at the Feeding Grounds.
By special invitation.
(Photographed by Paul Bartsch.)

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NUMBER 8.

Original Articles.

BIRDS OF THE ROAD.—IV.

By PAUL BARTSCH, Washington, D. C.

IN LENTEN TIME WHEN LEAVES WAX GREEN.

How slowly they have waxed this year; usually they are well greened by the middle of April, but this has indeed been a slow season: Snow at divers times up to the last of March! We see the Swallow and the Snowbirds meet and even the Gulls remain a little longer than they are wont to do.

Perhaps the most interesting feature of the past month was the snow storm on the 16-18, which for the last time this season decked our earth in snowy whiteness, and wrapped our trees in heavy robes of down; for we collected a debt from the birds on these days, which they had contracted on the various severe spells during the cold winter, when they partook of the food which we had tendered them. We asked them to pose for, or rather before, our camera and they consented, permitting us to take a large series of photos, which contained chiefly Purple Finches, though some, also showed Snowbirds, Song Sparrows and White-throats, and one even contained a Foxy among the assemblage. We are pleased to give the readers a view of the crowd in the accompanying illustration.

Our cedars were a favored resort of all these species—even a large flock of Robins paid a flying visit to them Sunday the 18th. They were bright and cheery, feeding chiefly on the berries dropped on the snow, though some preferred picking them. It was a pretty sight to see the bunch move about on the white surface; they offered quite a contrast to the Robin we see pulling an all too long worm from the sod of our lawn. We tendered them a few handfuls of chopped boiled beef, which must have been a somewhat unusual addition to their bill of fare, though not an unwelcome one.

Waxwings too called on us in these days of cold and snow and laid claim to the black fruits which our Smilax had hung out for them last fall. What a peaceful and sociable lot they are, always pleased to be close friends. Having had their fill they repaired to the higher branches of the tree which forms the Smilax's support and huddled close together, to keep warm I suppose.

I am not certain whether they know what the word "spoon" of pioneer days means, but believe they do. For Waxwings when seated shoulder to shoulder (seven on one small branch this time) all point their heads in one direction and apparently change when the word is passed. I consider the Cedar Bird one of the most beautiful of our birds in his simple array of colors—and wonder little that he has so small a repertoire. Nature evidently expended all the time allotted to her in the production of his harmonious garb. If the Waxwing lacks notes he makes up for it in expression. His poses and countenance are a study, the long crest adding not a little to his many pleasing attitudes. His doleful, long drawn note seems to harmonize well with the cold surroundings of the present.

One morning I awoke with a Cardinal's note ringing faintly in my ear—listening, I again heard that unmistakable call, which led me to my window. Here he was, at my feeding place, the brilliant king in his flashing robes, with his humble spouse, enjoying with a host of Purple Finches, what these had been unable to devour the previous day. I am sorry the cold weather did not last another week. We might have become better acquainted, but I hope he will remember the occasion next winter and will return to spend it with us.

Here let me say to you, who are not wholly hemmed in by walls of brick and mortar; to you, who have the good fortune to possess in your surroundings a few trees and shrubs; if you wish to obtain real enjoyment invest in a few pounds of hemp seed and spread this regularly to the birds. Give them plenty of it when cold and snow bring them begging to your door and I vouch you will agree that your money was well invested, your harvest one of a thousand fold. Keep one spot for feeding, a place which you can easily overlook from your window, and you will be surprised to find how many bird callers you will have, both as to individuals and species. The birds soon learn to know the place and the good news spreads rapidly. I was most forcibly shown this one day last winter, when I had mounted the high scaffold of a neighbor's

windmill, to take a birds-eye view of our premises. I saw birds come long distances, heading for our place, ignoring all others, evidently knowing that a table had been spread for them. One of my 4x5 photos shows thirty-nine specimens busily engaged at meal—and I counted sixty-three present at one time. All hungry and ready to eat.

But these are things of the past. To-day the Chipping Sparrow sends his simple thrill forth from the same trees in which the Purple Finches were rehearsing their notes in an undertone a month ago and an occasional Bluebird lips his dainty note as he floats past, through the blue sky. The Purple Grackle again struts over the Smithsonian lawn just as he did a year ago, displaying his glossy coat much to the disgust of the vicious Fish Crows, who seems jealous of his iridescent hues and would rather have them in Maryland than in the Park.

The Robin again mounts a tip-top branch at dawn and eve and tells us to be "cheery, cheerily!" and to "Cheer up Cheer up Tut, Tut, Cheer up, Cheerily!" and so we do!

its warm rays down upon your treasures to-day, or your spouse could scarcely spare the time for such frivolities. Enjoy yourself while yet you may, for soon the hungry pair of infants will require your watchful eyes to roam the field for mice and kindred folk more closely.

Chickweed, Draba, Bluets and Hepatica are all in bloom and Dicentra and Arbutus are ready to spring their swelling buds. Birds are everywhere to-day—Junco is in full song and roams the tree tops from which he sends his fine chattering trill, as well as from the recesses of the shady glen.

Bluebirds seem abundant, and one male responds to my imitating call. He is angry—evidently he dislikes the intruder—I don't blame him. He has a pretty, coy, wife and a fine orchard; I hope he will remain to rear his brood. As we passed an extensive meadow we noticed the first representatives of the Swallow family, a pair of the most graceful members of the group—the Barn Swallow—skimming lightly through the air raising and lowering as the chase after the winged prey demands. What an



Purple Grackle. *Quiscalus quiscula*.
(From Bulletin 7 of Division of Economic Biology D. A.)

APRIL, 1ST.

Light at heart we grasp our cane and trend our step country ward—to the woods and fields where flowers ought to bloom; where nature greets with silent language and tongue both quaint and varied. Yea, indeed on days like these we can truly say that:

"The town and all its pleasures
No charms to me disclose,
But midst the woodland forests
My heart finds sweet repose."

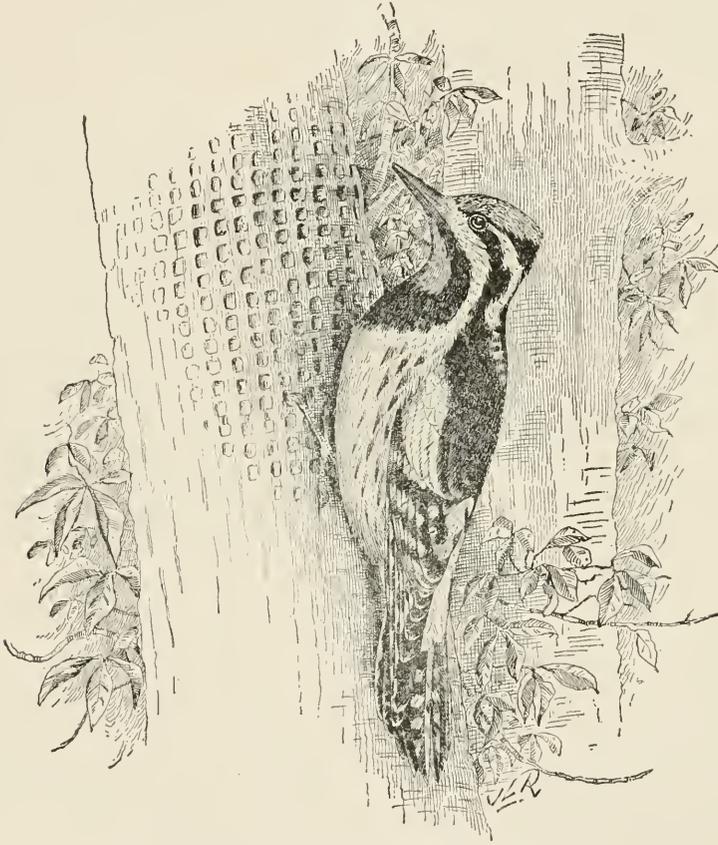
High up in the blue ether a pair of Hawks are sporting and screaming from sheer happiness.

Buteo it is well for you that the sun is beaming unlimited amount of enthusiasm and pleasure these winged messengers of spring bring with them. It seems as if our spirit mounted with them into a purer atmosphere, yea, our mind passes beyond this and dwells with spheres where the mind alone can dwell. What a promise to the world is this returning spring! and Swallow, graceful, pretty Swallow, you are its herald true!

We are visiting the timbered region of Silver Hill, Md., to-day. This is said to cover about four square miles and I believe it to be the largest and finest piece of woods near Washington.

While we were enjoying our luncheon, stretched upon a mat of ashy lichens, on a hill top, we noticed the first butterfly, a pair of Mourning Cloaks (*Vanessa antiopa*), and whilst contemplating their capture we were rather startled by the sudden loud cackling laugh of the Pileated Woodpecker. For a while a pair of these birds made themselves quite conspicuous by their rollicking notes and manner and the occasional strong tapping of their bill. (This bird accidentally posed for the Yellow-bellied Woodpecker in the last number of the OSPREY and we shall now make reparation to Mr. Sphyrapicus by publishing his cut in his place).

tion of this desire. Though present in numbers at this season, they have never favored me with a sample of their much praised song. The High-hole sounds his flicker, flicker, flicker, flicker, with great glee as, with many a bob and antic quaint, he pursues his mate up fences post and tree trunks, and chases her with restless energy from one to another, all the while displaying his scarlet crest, or the brilliant golden under surface of his wings and tail, or more often the bright white rump patch which pronounces him the Flicker as loudly as his call. I love to hear his buoyant voice, and watch him woo his mate again, with the old springtime



The Yellow-bellied Woodpecker. *Sphyrapicus varius*.
(From Bulletin 7 of Division of Economic Biology D. A.)

The Old Field Lark's sweet strains now and then were wafted to us on the breeze from distant pasture fields, and mingled with them often came the powerful beats of happy Cardinal's from the roadside-skirting brush. All nature seemed gay and joyous to-day. Even the frogs of the miry pools sent up their jolly medley of japs and krrs that not a space might be void of merry revelry.

I have often longed to hear the eastern form of the Vesper Sparrow offer his pastoral hymn, but so far have been unable to obtain gratifica-

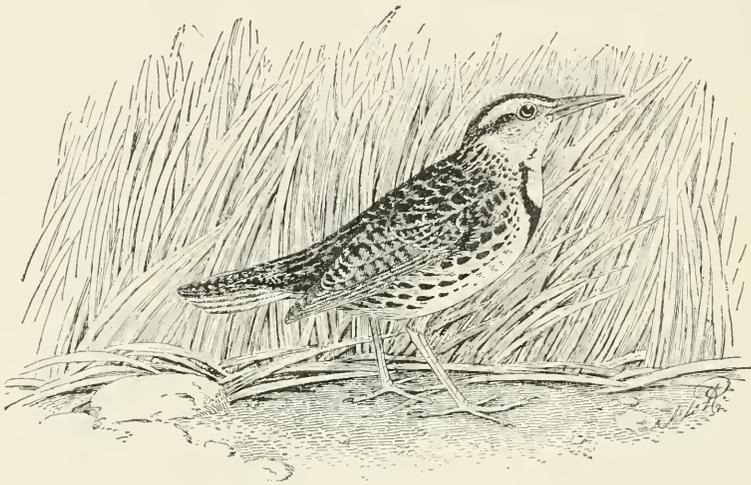
tion and ardor. He is indeed a very happy fellow.

How subdued the pines are humming to-day, sweet and drowsily, inviting the passer-by to tarry a while and listen to their restful mood and imbibe that peaceful harmony which always seems their own. The pines are not the favorite haunts of many of our birds at this season, except at night then indeed they furnish a safe cover to many of our feathered friends. But to-day, when the sunshine calls to new life all vegetation, the birds seek brighter fields!

Silent Crossbills, busily shelling pine seeds from the cone, and now and then a band of lisping frivolous Kinglets appear to be the only avian members present in these groves to-day. Even the tiny Kinglet has caught up the spirit of spring and stops at times to bubble forth a most enthusiastic jumble of blithesome notes all small, even as the bird itself, but full of blissful inspiration. He is never tired of his simple rollicking ditty and repeats it again and again. In several places in our woody path, where the pines stood a little apart, permitting the sunshine to warm the red clay soil, we met another member of those fairy airy creatures, the butterflies, and these belonged to the genus *Grapha*; they were all too shy to permit of closer identification. Tufted Tits and Carolina Chickadees were romping in a locust thicket, but their notes all denoted displeasure.

no doubt evoked by our presence. They were quite as intent upon the selection of nesting sites as were the Downys which took a peep at us from behind a sheltering limb.

As evening closed upon the scene we rested once again and listened to the hum of the trolley cars, the puff of the steam engine and the occasional whistle from a steamer, as we looked upon the city with all its multitude, from the elevated lookout afforded at Over-Look-Inn. The sun framed in a scene of clouds which words and brush would vain attempt to express, was casting a last parting glance upon the gilded dome of the Library, the Capitol and the top of the Monument. Then came a lull in the winds and sounds, as if to give the solitary Mourning Dove observed, a chance to sound an Ave Maria at the close of day.



Meadow Lark. *Sturnella magna*.
(From Bulletin 7 of Division of Economic Biology D. A.)

NESTING OF SOME RARE BIRDS.

By WM. L. WELLS, Listowell, Ont.

THE FOX SPARROW.

On the 22nd of November, 1899, when in the city of Stratford, I called at the residence of a gentleman who I understood had devoted much time and attention to the study of birds and their nidification; and who I found had in his cabinet a fairly good collection of oological specimens. On looking over these I was rather surprised to notice a set of three eggs, labeled "Fox Sparrow." On inquiry, Mr. Square informed me that he had himself collected the specimens about ten years ago. The location where the nest was found was a swampy place, a short distance to the southwards of the city limits, and the situation of the nesting site was a clump of sedges, or swamp grass, the materials used being similar to those appropriated by the other species of Canadian sparrows that nest in similar situations, *i. e.* stems of grass and

weed stems, lined with vine vegetable materials. The eggs when taken in the early part of June were fresh, and the set was evidently not completed. In size, these are larger than the eggs of many other of the sparrows found in Ontario; in form they resemble those of the White-throated Sparrow; but in color and marking are more like those of a small set of Mocking birds. Mr. Square had previously observed the birds in the locality, and specially noted the melodious song of the male, and of his ability to identify the species there is no reason to doubt. It is only occasionally, in the periods of the spring and fall migrations, that any of this species is observed in the vicinity of Listowell, and only on one occasion, in the spring season, when a few of the species stopped for a few days did I ever hear its song notes.

The summer haunts and home of the Fox-colored Sparrow are generally to be found in the

regions north of Ontario, in northeast Quebec, Labrador and Newfoundland. Mr. Gosse in his volume, *The Canadian Naturalist*, says that, during his stay in that island, he became very familiar with this bird, as it was in Newfoundland one of the most common species, and in its manners fearless and familiar, in these respects resembling the European House-sparrow (p. 246). Audubon records the Fox-colored Sparrow as among the birds that he found breeding on the Magdalene Islands, and speaking of the species of land birds observed in Labrador, he says, "So sonorous is the song of the Fox-colored Sparrow, that I hear it for hours most distinctly, from the cabin where I am drawing, and yet it is distant more than a quarter of a mile. This bird is in this country what the Towee Bunting is in the Middle States".

Mr. Wm. Couper, editor of the *Canadian Sportsman and Naturalist*, who visited this region in 1867, writes regarding this bird, "the sweet song of the Fox-colored Sparrow (*Passerella iliaca*) is pleasing to the ear as we wander through the open parts of these northern forests, and it was with no small joy that we discovered the nest on the 15th of June, and authenticated its eggs for the first time. Audubon has made a mistake in his description of the eggs of this species. The egg is larger than that of any other sparrow found within this latitude, and they are completely covered with patches of a ferruginous tint. Contrary to the habit of sparrows, this nest was built in a low fir tree, about three feet from the ground," (vol. 1, p. 53).

And in vol. 3, No. 6, in an article on this species, Mr. Couper says: During my summer visits to the Island of Anticosti, and the north shore of the St. Lawrence, I had many opportunities of watching this beautiful sparrow. In fact it was on the Labradorian coast that I first heard its delightful song, and although the notes are few, they are given in a sweet, clear, distinct tone; but when several males are responding, they seem to cheer, and add life to their dreary surroundings. The call is certainly pleasant to the ear of man, more especially when he is alone in a region where the song of no other bird is heard. All this class of birds have their peculiar nuptial notes: those of the Fox-colored Sparrow sound to my ear like, O dear-dear-pretty-pretty-creature. I do not think it has been found nesting in the province of Quebec, west of the Godbout. As far as I could discover, its summer retreat is in the bays of Anticosti, and the woodlands skirting the north coast of the lower St. Lawrence. It seldom nests on the ground, as those which I found were in small trees on the margin of rivers and creeks, not far from the sea.

THE LITTLE YELLOW RAIL.

In the oological collection of Mr. Square, in the city of Stratford, I also noticed a specimen of eggs of the little Yellow Rail, which that gentleman had also collected some years ago in the marsh formed by an expansion of the river Avon, in the northern part of the city. The nest when found contained two eggs; but one of them was unfortunately destroyed in transmission. The nest, itself, was placed in a

tuft of Sedge or Swamp grass, standing in the water, and was formed in a similar manner, and of similar materials as those of the larger species of the Rail genus; but was similar in size, and more neatly made up, than that of the Sora Rail; but the egg in form and marking more resembled those of the Virginian, than the Sora species; in fact its ground color, a yellowish white with distinctly dark, brownish spots, is quite like that of a King bird, though the form is that of the Rail. This is the first report of the nesting of this species in the inland parts of Ontario, that has come under my notice. Mr. Square also stated that, though he had on several occasions observed the species in that vicinity, yet its occurrence there was rare. This gentleman usually spends the summer season in the district of Muskoka, and is well acquainted with the species and distribution of Canadian birds.

In the second edition of the birds of Ontario, 1894, Mr. Thos. McIlwraith says, regarding this species: "We know little of this bird, partly because it belongs to a class much given to keeping out of sight; but chiefly because it is a rare species everywhere." He tells of seeing a mounted specimen in Toronto, and heard of another in Ottawa, and continues, "the greater number of specimens of the Yellow Rail now in existence have been found in New England; but that may be owing to the greater number of collectors there. It would be well for our Canadian sportsmen to look out for the species when visiting its haunts, because from its general resemblance to the Sora, it may readily be overlooked. One observer reports it as a tolerably common summer resident near Winnipeg, and it has also been noticed at Fort George by Dr. Bell. It has therefore a wide distribution, but is nowhere abundant."

Professor Davie, of Columbus, O., writes regarding this species: "The small Yellow Crane appears to be quite rare everywhere in Eastern North America. It is known to breed in Northern Illinois, where its eggs have been taken. Dr. Howard Jones has frequently taken it in the vicinity of Circleville, Ohio, and considers it nearly as common as the other species, and believes it breeds there. The little Yellow Rail has the same general traits common to others of this family, frequenting marshy places, skulking and hiding in the wet grass to elude observation. The eggs are said to be about six in number, rich, buffy brown, marked at the larger end with a cluster of reddish-brown dots; sizes range from .80 to .85 broad by 1.05 to 1.12 long." The egg noted above was distinctly spotted over the greater part of the surface.

NEST OF THE SOLITARY SANDPIPER.

In the "Montreal Witness" of October 4, 1898, in reply to the query of a correspondent regarding the existence of a society for the preservation of birds, I note the following interesting statement. "Wild birds are said to be unusually plentiful this year in Canada: in this connection it is worthy of note that Dr. Clarke, Medical Superintendent of the Rockwood Hospital for the Insane, at Kingston, found, about the beginning of the summer, the nest and eggs

of the Solitary Sandpiper upon the shores of a little island near Kingston. The bird itself has occasionally been met with in Canada; but this is the first instance recorded of the discovery of its eggs in this country*.

A correspondent, writing to me from Guelph in the fall of the past year, states that a pair of these birds were observed about the margin of a small lake near that city, on various occasions during the past summer, and that he was certain they had nested there.

The Solitary Sandpiper is rather a rare migrant in the vicinity of Listowell; but, being rather solitary in its habits, and frequenting out-of-the-way places, about the margins of creeks and ponds, where persons who are disposed to report their observations seldom resort, it is not improbable that the species may be more abundant, than is now supposed by those who study our avifaunian life, and that they nest in places where our few ornithologists have never dreamed of. And seldom does a spring, or autumn season come and go without some of

the species being observed about some ponds on Wildwood; but the latter part of May and the ending of July are the periods when they are generally noted here. At times they are seen in pairs; but more often alone. Owing to its form, color, size, notes, and the peculiar manner in which it frequently raises its wings, it is easily recognizable to the habitual observer as specifically distinct from the more common Spotted Sandpiper.

In the Saunders and Morden List of Birds of Western Ontario, 1882, it is stated that, in the summer of 1879, this bird bred very commonly along the streams in Middlesex; but has since become quite rare. No details of its nesting or eggs are given. Other ornithologists have described its nest as being very similar to that of the Spotted Sandpiper, and its eggs to be of clay-color, with a reddish and blackish tinge. So far no complete set of its eggs is known to exist in any collection, and much interest must still be manifested in any authentic report regarding its nidification.

WILLIAM SWAINSON AND HIS TIMES.—II.

By THEODORE GILL, Washington, D. C.

(Continued from page 108.)

"Soon after this, I was appointed, by general Maitland, chief of the commissariat staff in Genoa. But the glorious works of the Italian painters, so profusely scattered in the churches and galleries of Rome and Florence, cooled, for a time, my passion for natural history. I began collecting their pictures, sketches, and etchings—particularly those of the Genoese school—without, however, neglecting the plants and insects of northern Italy. After making excursions, as opportunity or duty permitted, through various parts of Tuscany, I was again ordered to join the head-quarters of our army at Palermo, where I arrived in the autumn of 1814. The Russian campaign of 1812 had now totally changed the political horizon. England had at length restored Naples to the king of the Two Sicilies; and the French had been completely driven out of Italy. Eight years had elapsed since I quitted England; and I looked forward, with no small delight, to the reduction of the Mediterranean army, which would release me from my official duties. The examination and audit, however, of the numerous accounts connected with its establishment, required the greatest exertion on our part; and my application to return home was therefore suspended until the following year. At Palermo, I had the pleasure of meeting the baron Bivona, the most learned botanist of Sicily; and my old correspondent, Rafinesque Schmaltz, whose first name is familiar to most zoologists. In the society of such congenial minds, I passed many happy hours, and made many delightful excursions. By the assistance of the first, my materials for a *Flora Sicula* were considerably augmented; while, by the inducements of the latter,

I was led to investigate the ichthyology of the western coast. These duties and relaxations continued until the middle of 1815; when my health gradually getting worse, it was deemed necessary, by the medical men, that I should return to England. I embarked from Palermo; and had the happiness of landing all my collections of nature and art at Liverpool, in the autumn of 1815.

"I was now only twenty-six; and through the powerful interest of my family connections (certainly not from my own merit), I had risen to a rank somewhat unusual for a young man.* I liked the service, but my old passion for travelling in tropical countries returned with its original force: I had now to choose, whether I would give up the latter for some new and higher appointment my friends were ready to procure me, or whether I should go upon half pay, and follow my own course. I hesitated not to choose the latter."

AFTER RESIGNATION.

So Swainson resigned his active command in the army. He was unwilling, however, to entirely "cut loose" from it. He gloried in reminiscences of his former connection. He boasted that he had been, "in fact, the youngest Assistant Commissary-General on the staff of the Mediterranean Army," and thought that he might be "pardoned, therefore, for having been *somewhat particular*," he says, "in my horses and 'equipments,'" which he had described.* He published the reminiscence in the initials following his name on the title pages of his various books—"A. C. G." (Assistant Commissary-

*I was, in fact, the youngest Assistant Commissary-General on the staff of the Mediterranean army. I may be pardoned, therefore, for having been *somewhat particular* in my horses and "equipments";

General) preceding "F. R. S." (Fellow of the Royal Society). He flourished it in the face of those whom he considered his juniors in service. For example, in a controversy with N. A. Vigors, many years after his resignation, (1831) in the Magazine of Natural History (iv. 484), he recalls that that gentleman "was, or is, in the army; consequently he knows, or should know, that he of whom he writes is his superior officer, and that in 'camps and courts' he must give him place"! Swainson was more appreciative of the joys of peace than of war, however, in most respects and only was called upon to apply his knowledge of commissariat affairs in a small way to an expedition which he contemplated for collecting objects of natural history. He had now ample leisure on his hands and a sufficient competence for a bachelor. Besides his half pay he had an allowance of about a thousand dollars a year from his father. He was at liberty therefore to go where he willed and he had the means to gratify his wishes in moderation. He had become unfitted to enjoy the usual social employments of an English gentleman. He says: "After living so long upon the Continent, and accustomed to the unsettled life of the soldier, I was struck by what I thought the artificial habits and the luxury of English society. I sighed for my Sicilian cottage; I longed again to ramble over mountains clothed with luxurious plants—to sketch delightful scenery—to rise with the sun, gallop on the sands, climb precipices, and swim in the sea. In place of this, I had to join dinner parties, drink wines I detested, ride in carriages, dance at balls, and do a hundred other things for which I had neither health nor inclination. Domestic society I truly enjoyed; but that was not sufficient to keep me at home. I had, therefore, no sooner returned to England than I began laying plans for quitting it. Having been delighted with reading Le Vaillant's travels, when a boy, and subsequently perusing those of Mr. Barrow, I fixed upon Southern Africa as the best field for zoological investigation. I therefore began reading books, and filled a volume with extracts of every thing about the Cape. But this project was diverted by a singular incident. Happening to spend an evening with Mr. Lambert, the celebrated botanist, he told me he had just had a letter from a friend of his, who had been many years travelling at the Cape, and had brought with him a collection which filled two wagons! This friend was no other than Dr. Burchell. I heard the news with dismay; for what, thought I, can be now left in South Africa, more than the gleanings of a harvest already reaped? A little consideration might have showed me the absurdity of this opinion; but as I could not submit to follow in the wake of another, I at once determined to relinquish the Cape and choose some other quarter yet untrod by the naturalist. This choice was soon made."

VISIT TO BRAZIL.

After considering various projects, Swainson resolved to go on a collecting trip to South America. "About this time, the jealousy of the

Portuguese government relaxed, and they opened Brazil to European researches. Mr. [Henry] Koster had just published [1816] his travels [in Brazil]; he gave [Swainson] such a picture of the zoological riches of the country he had just quitted, that [Swainson] resolved to accompany him on his second journey; and [the two] left England together on the 22d of November, 1816." Swainson has given a brief account of his journey in the Edinburgh Philosophical Journal (i. 369-373, 1819), and another later in his autobiographical sketch, but in so vague a manner that it is not clear from either one what his exact route was: combining and interpreting the two versions, the following is as near the facts as we can get.

Swainson, with Koster, "landed about the end of December, 1816, at Recife, in the province of Pernambuco, 8 degrees south of the line." While here he was witness to one of the periodical disturbances which afflict South American states—"the memorable revolt of the 6th of March, 1817,"—and this delayed his start for the interior. "On the restoration of tranquility," in June 1817, he "quitted Pernambuco with "a small train" (a guide and three Indians) for "the great river St. Francisco" or São Francisco of the Portuguese Brazilians; he "set off overland" for the river. He found that "the face and productions of the inland parts differ most essentially from those of the coast. Water in these dreary tracts is at all times scarce, and the excessive drought that had prevailed frequently exposed [the party] to great privations and even danger." He notes: "while travelling the *Sertem*, or interior of Pernambuco, we were constrained to drink *dilch* water; hundreds of cattle perished; whole villages migrated to the sea coast; and we often were obliged to pick the maggots out of our dried meat before it could be converted into soup." At length, "in the beginning of August," he and his party "reached the village of Penedu" on the Rio São Francisco. He resolved to travel no longer overland. "The drought in the interior rendered it impossible to proceed by that route to St. Salvador" (São Salvador de Bahia) or, as generally known, Bahia and he "accordingly embarked for the place in a canoe, and arrived in eight days." (So he says. We are practically told that he descended the river São Francisco and thence made a voyage of several hundreds of miles in open sea in what he calls a canoe.) Elsewhere (Birds, i, 260), he says that nearly a year was spent in the province of Pernambuco alone and he subsequently traversed overland to Bahia. At Bahia he "found the two Prussian naturalists, Messrs. Sellow and Freyerics, who had come overland from Rio de Janeiro, with the Prince Nieuwied, and had remained in the city from ill health, and also to arrange their collections."

Swainson soon left them, and "made nearly a complete tour of the bay [Bahia], and again set out for the *Sertem*, where, says he, "I continued, varying my residence, until the month of March following, having in this space made immense collections in every branch of natural history, particularly in the ornithology of the interior, which differs both in species and novelty from

those procured by the Prussian naturalists on the coast."

Satisfied with his sojourn at Bahia, in April Swainson "embarked for Rio de Janeiro, more for the sake of comparing the southern with the equinoctial regions of Brazil, than of increasing my collections." he says, "in a part already well explored." He "found the summer nearly terminated, but the heat far above that of Pernambuco, though Rio de Janeiro is in latitude 22° 54', and Pernambuco in 8°". In Rio de Janeiro were found travellers and men of science from the Austrian, French, Russian and Tuscan courts."

He "met with Dr. Langsdorff [the Russian Consul-General in Brazil], the late Dr. Raddi of Florence, and some of the German naturalists sent by the court of Austria." One of those "German naturalists" was destined to become celebrated as an explorer of the avifauna of Brazil—Dr. Johann Natterer. Although Swainson does not mention meeting him in either of his accounts of travel, he incidentally notes elsewhere in 1836 (*Birds*, i, 260), that he recently "had the pleasure of a personal visit from Dr. Natterer, whom [he] left in Brazil in 1817." (Natterer in 1836 had "only just returned to Europe.") Swainson does not seem to have affiliated with the German naturalists. But "with Langsdorff" he "made several excursions." Also with "Professor Raddi, director of the Museum at Florence, who was indefatigable in forming a fine collection of the fruit and seeds of the country," he "made an excursion to the immense range of mountains, called the Organ Mountains, which for leagues are covered with almost impenetrable forests, abounding in ferns, melastomas, and insects quite peculiar to them."

His success in collecting in the province was perfectly satisfactory to himself; "in four months" he "so enriched [his] collections, that [he] became almost satiated." He felt he "had more than enough to study and arrange for years to come." He "therefore broke up" his party and in August 1818, "embarked for England and once more," says he,—"like a bee loaded with honey—returned to my father's house."

He had been absent from England nearly a year and ten months and had spent a year and eight months in Brazil. About six months were taken up in Pernambuco, and nearly two months in the journey to the Rio São Francisco, about eight in Bahia and excursions from that city, and, as he says, about "four months" in and near Rio de Janeiro.

The manner in which a collector of the first quarter of the century proceeded may entertain those of the end. It is to be remembered that Swainson was almost equally interested in ornithology, entomology and conchology, and col-

lected in all branches. We must confine ourselves, however, to his work on birds.

In his Taxidermy (p. 4) he has given his ideas of the outfit for a collector and we may assume that he had furnished himself with such during his Brazilian tours. He thinks "a collector of birds should be provided with one or two light fowling pieces, and duplicate parts of all their usual apparatus; a supply of the best powder contained in tin canisters, and of shot in bags; he may take with him a small quantity of swan and duck shot, but he will find Nos. 6 and 8 the most useful; while small birds not larger than a sparrow are killed with the least injury to their plumage by what is called dust shot. For preserving, he must have a good supply of arsenical soap, penknives, sharp and blunt pointed scissors, etc." Cotton and tar must also be available.

Swainson tried various preservatives and among them a preparation originated by another noted traveller in South America, Charles Waterton, much vaunted by the discoverer and some others. He found it very untrustworthy. He made an "experiment with Mr. Waterton's composition when in Brazil," and he gave the results in a note in his *Natural History and Classification of Birds* (i, 265).†

The "arsenic soap" which he finally adopted, or "arseniated soap", as he also calls it, was composed of "arsenic, 1 ounce; white soap, 1 ounce; carbonate of potash, 1 drachm; distilled water, 6 drachms; camphor, 2 drachms." It could be made into cakes like ordinary soap, and "one piece, no larger than an ordinary cake of Windsor soap, is sufficient to preserve 500 small birds." It was used by moistening "a camel's hair pencil with any kind of spirituous liquor", making a lather, and applying it to "the inner surface of all parts of the skin," etc. Due precaution is recommended against letting it get under the nails, and the necessity of washing the hands immediately after use is enforced. Although in great favor for a long time, the use of arsenical soaps of any kind was abandoned long ago, and the mode of preparation and use is interesting only as history and not for present use.

He found that "birds in tropical countries are in general, so tame that they can be approached very near; there is therefore, little occasion to be very particular about the excellency of the gun or the quality of the powder, "but the first, for convenience, should be light, and the last good. Humming birds are advantageously shot when hovering over the flowers on the nectar of which they feed; but the charge should be very small, and dust shot alone used. Birds of the size of a Hawk or Thrush may be killed with shot No. 8. In some parts of America, the natives shoot the Creepers and Humming birds with a blow pipe. An expert marksman of this

†The ants, which swarmed in a room which I inhabited at Pernambuco, had committed great devastation among the prepared insects and birds. While preserving one of the latter, I cut off a piece of the flesh, and, after saturating it with the composition, laid it in the path which led to one of their holes. The little creatures seemed at first to be somewhat suspicious of its wholesomeness; but, after walking about and upon it, and examining it with their antennae, they seemed to pronounce a favorable verdict, for one and all began dragging it away to the entrance of their nest, where it soon disappeared beneath the earthen floor. The experiment was repeated three times, and the same result followed. The mixture had been brought from England, and I had no reason to believe it was defective in the preparation. After this trial I determined on using the arsenic soap; naturally concluding that if ants would devour the soaked flesh of a bird, they would not scruple to attack its skin, which could only be washed with the liquor on the inner side.

sort might be retained in the service of the collector, as the specimens are killed without the least injury to their plumage and consequently in the best state for preservation. The sexes of every species should be industriously sought after, and no pains should be spared in watching their manners and habits" (Taxidermy, p. 5, 6.) He soon learned, also, that in the tropical lands "birds will not keep beyond a day without some degree of putrefaction taking place; this shows itself by the feathers coming off; first on the belly, and after on the front; it is, therefore, advisable not to shoot more specimens than can be prepared in twenty-four hours (Taxidermy, p. 5.)

He "always made it a point of conscience never to throw away a bird after it had been killed; considering that its life would then have been taken wantonly, and without any benefit either to science or to useful information." (Birds, i, 250).

His industry had been rewarded by what he considered to be "immense collections in every branch of natural history, particularly in the ornithology of the interior." He specifies: "of birds, there are 760 specimens [species not distinguished], among which are many entirely new species, and others exceedingly rare, particularly in the genus *Trochilus*, of which family," says Swainson, "I am now engaged in making a general arrangement; two or three new Toucans, a singular Goat-sucker, with a tail doubly forked, etc."

SWAINSON AFTER HIS RETURN FROM BRAZIL.

Swainson, then, was back in England again flushed with the consciousness of what he considered great success. The "multiplicity" of his collections made him "uncertain what to do first". One of the first things he did was to respond to a "request" of Professor Jameson, the editor of the "Edinburgh Philosophical Journal," and prepare for that journal "a short abstract" of his "travels"; this was published "without any comment, or one word of praise." An unprejudiced reader would not wonder at the reticence of the editor and would not think that comments or praise should be expected for such an account; it was indefinite and the summary itself did not record remarkable results. Nevertheless Swainson felt much aggrieved because no special notice was taken of it, and long cherished the silence as a grievance. He was so affected even that he abandoned all intention of publishing his results "in a separate work" and was "discouraged by the idea that the unpatronized researches of an unknown individual might probably be thought insignificant, when compared to those of naturalists sent out by governments and which the editor lavishly praised in the very same number of his Journal" which contained Swainson's account. He contrasted what he knew about his own collections with what he conjectured

about the results of his German fellow laborers whom he met in Rio de Janeiro. He thought that "never perhaps, was so little done by such a party. Out of five or six naturalists, sent from Vienna to investigate the botany and zoology, the only one who remained sufficiently long to reap the harvest before him," was his "friend M. Natterer; the rest, after wasting their time at Rio, and making little excursions in the provinces, returned to Europe."‡ What- ever may be the truth with respect to the German naturalists Swainson met in Brazil, two then exploring in that country certainly did not deserve censure.

SPIX AND NATTERER.

Johann Baptist von Spix, then about 26 years old, was in Brazil at the same time, and, as Swainson records, "the banks of the great river Maranhão or the Oronokoo" (so he spells them) were visited by him. Swainson had been informed even "that this naturalist was at length so overwhelmed with the new objects that crowded upon him in every department, that he was absolutely wearied to satiety, and determined on returning home to Europe, justly considering that, had he still continued to collect, he could never hope to make known even one entire portion of his discoveries."|| He might have added that death supervened (1826) not long after his return to Europe, and that his collections were mostly worked up and published by others.

Johann Natterer, whom Swainson (Taxidermy, p. 296) designates as "an acute and most zealous ornithologist," was the greatest bird-hunter or field ornithologist of all time. Swainson records his success with amazement. "His Brazilian collections must be immense", he says "as he assured me he had found more than 1000 species in that region!" In a previous work (Birds i, 1836) he had been more precise. In a note to a page (260) he tells us that very recently he "had the pleasure of a personal visit from Dr. Natterer, whom [he] left in Brazil in 1817. [Natterer had] only just returned to Europe, having procured the astonishing number of 1070 species of birds in that vast empire." Even this, however, proved to be very far within the truth. Many years afterwards (1868-71) Natterer's collections were submitted to a systematic survey by August von Pelzel, and the results summarized in a special volume ("Zur Ornithologie Brasiliens") completed in 1871. An "Itinerarium" of Natterer's Travels in Brazil extending from 1817 to 1835 was given as an introduction, and the mere list of places at which he collected during his ten journeys (Reise) fills 20 pages. Of the characteristic American families of the Tyrant Flycatchers (*Tyrannidæ*) and Ant Thrushes (*Formicariidæ*) alone von Pelzel records 331 species—167 of the former and 164 of the latter!

(To be Continued.)

‡Swainson's Taxidermy, etc., p. 345.

§Swainson of course did not forget his geography and confound the Amazon (Maranhão) and Orinoco into one river although his language is ambiguous. It was in the Amazon (or Marañon) basin that Spix explored with von Martius.

||Swainson's Natural History of Birds, i, p. 260.

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Comments.

HOW TWO LIONS STOPPED THE BUILDING OF AN AFRICAN RAILROAD.

The OSPREY has restricted its range of late to ornithology, but in the past frequently admitted articles of a more general character. A recent episode of extreme interest to the naturalist as well as other readers, including the special ornithologist, appears to justify the insertion of an article on a mammalogical topic. It records the arrest or retardation for some months of the building of a railroad in equatorial Africa (Uganda) in the valley of the Tsavos river about 100 miles from the Zanzibar coast. We reprint the article from *The Spectator* of London.

BIRDS AND WOMEN.

We have received a number of communications respecting the slaughter of birds for their plumage and publish, by request, two of them in the

present number of the OSPREY. We doubt, however, the efficacy of laws passed for the protection of birds when those laws are not charged with the *means* as well as other provisions for their enforcement. If the demand exists for anything, that demand will be supplied if it can be done with a profit. Sentiment has little influence on the barbarians who seek to add to their gains by wholesale slaughter of birds. The right course is to educate those whose desires are to be gratified only by such slaughter.

And what a commentary such a desire is on boasted civilization of our century! Now it is only one sex among the civilized that is actuated by that desire. Formerly it was different. Even now the "gentle sex" is rivalled among savage tribes. Once in a while we may see in Washington, among a delegation from some yet untamed Indian horde, men with feathers stuck in the head-gear. The incongruity is striking. But why is there greater incongruity between the head-dress of a woman and the wearer? Custom has familiarized us with the sight, and therefore our attention is enervated. But in the future—possibly very distant—the woman as well as man of that time will read with amusement of the head-dress of the woman of the past. Man has renounced the togger of his savage days, but dear woman (God bless her!) still clings to part of it.

How long will the habit of wearing feathers stuck in the hat last? None can tell. But if the educated woman would exercise her prerogative and think for herself instead of allowing herself to be influenced by the ignorant milliner of barbaric taste, the coming of the good time might be hastened. If even the children that are to be developed into milliners could be instructed in the principles of esthetics, the time might also be accelerated.

Many men—if not most—certainly think that adornment of the head-gear with flowers is much more beautiful and becoming than a feather-decked hat. Why not wear such then? If show of wealth is an object, such a bonnet can be made to cost—and show the cost—as well as another!

Notes.

HOW TWO LIONS STOPPED AN AFRICAN RAILROAD. Speaking in the House of Lords of the progress of the Uganda Railway, Lord Salisbury mentioned that among the unexpected difficulties encountered were a pair of man-eating lions, which stopped the works for three weeks, before they were shot. As some five thousand men were at work on the line, their intimidation by two lions seemed almost incredible. Yet it is a fact that so dreadful was the pressure exercised by the constant attacks of this pair of man-devouring wild beasts, and so cumulative the fear caused among the Indian labourers by the sight and sound of their comrades being dragged off and devoured, that hundreds of these industrious workmen, trained on similar duties under the service of the Government of India, abandoned their employment and pay, and crying out that they agreed to work for wages, not to be food for lions or devils, rushed to the lines as the trains for the coast were approaching, and flinging themselves across the metals, gave the engine-drivers the choice, either of passing over their bodies, or of stopping to take them up and carry them back to Mombasa. Many of these men were not timid Hindoos, but sturdy Sikhs. Yet the circumstances were so unique, and the scene witnessed from week to week so bloody and appalling, that their panic and desperation are no matter for surprise. Lord Salisbury understated the facts. Though the *works* were stopped for three weeks, the lions' campaign lasted, with intervals of quiet when one or other had been wounded, from March till the end of December. In this time they killed and ate twenty-eight Indians, and it is believed at least twice this number of natives, Swahilis and the like; besides wounding and attacking others. They attacked white engineers, doctors, soldiers, and military officers, armed Abyssinian askaris, sepoy, bunniah, coolies, and porters. Some they clawed, some they devoured, some they carried off and left sticking in thorn fences, because they could not drag them through. At first they were contented to take one man between them. Before the end of their career they would take a man apiece on the same night, sometimes from the same hut or campfire. The plain, unvarnished tale of this "pre-historic revival" of the position originally held by man in the struggle for existence against ravenous beasts is set out at considerable length and detail in the *Field* of February 17th and February 24th by Mr. J. H. Patterson, one of the engineers of the line, who, after months of effort and personal risk, succeeded in breaking the spell, and killing both the lions, which the natives had come to regard as "devils," that is, as equivalent to were-wolves, and guided by the local demons.

The parallel to this story of the lions which stopped the rebuilding of Samaria must occur to every one, and if the Samaritans had quarter as good cause for their fears as had the railway coolies, their wish to propitiate the local deities is easily understood. If the whole body of lion anecdote, from the days of the Assyrian Kings till the last year of the nineteenth century, were

collated and brought together, it would not equal in tragedy or atrocity, in savageness or in sheer insolent contempt for man, armed or unarmed, white or black, the story of these two beasts. The scene of their exploits was only one hundred and thirty miles from the coast, in the valley of a cool and swift stream, the Tsavos River. Filled by the melting of the snow on Kilimanjaro, bordered with palms and ferns, and at a further distance by a dense and impassable jungle of thorns, its banks become suddenly the camping ground of thousand of hard-working Indian railwaymen, who slept in camps scattered up and down the line for some eight miles. Into these camps the lions came, thrusting their gigantic heads under the flaps of the tents, or walking in at the doors of the huts. Their first victim was a Sikh jemadar, taken from a tent shared by a dozen other workmen, the next a coolie. Then they raided the camps regularly until the local length of rail was finished and the bulk of the men moved up country out of the lions' beat. But some hundreds were left behind, to build bridges and do permanent work. It was then that the lions' reign of terror began, which ended in the complete stoppage of an Imperial enterprise supplied with every mechanism and appliance of civilization, from traction engines to armed troops.

Perhaps the strongest evidence of the pressure to which the beasts subjected the dominant biped man is that they forced him to become arboreal. If the setting of blood and bones were not so ghastly, the scene would provoke a smile. After hundreds had fled some three hundred still remained, for whom the engineer, worn out by want of sleep himself, and by constant tracking of the lions by day and sitting up by moonlight, endeavoured to find safe quarters by night, when they might be seen "perched on the top of water-tanks, roofs, and bridge-girders. Every good-sized tree in camp had as many beds lashed to it as its branches would bear. So many men got up a tree once when a camp was attacked that it came down, the men falling close to the lions. Strange to say, they did not heed them, but then they were busy devouring a man they had just seized.

The fearful shrieks of the victims rang in their ears night after night, till no one knew whose turn would come next. Sound men lay and listened to the cracking of bones and the tearing of limbs within fifty yards of the place where they were, and sick men in hospital expired from sheer terror as they listened to the monsters quarrelling over their feast. Twenty shots were fired in the dark at the sound of the lions eating a man, and they finished him to the last bone. They would spring over the highest thorn "boma," pick up a man and trot round with him looking for the best way out, as a cat carries a rat. Every one will ask, why were these men not armed? The answer is that the ordinary coolie does not know the use of arms, but that, even when the lions were fired at, unless actually hit, they cared nothing. Unlike nearly all wild beasts, they feared neither

fire, nor firearms, nor lamps, nor white men. One sprang on an officer's back, tore off his knapsack, and then carried off and ate a soldier who was following him. They prowled round and round white men in *machans* (sheltered by the dark), trying to stalk them. One was caught in an ingenious trap, made of two cages of steel rails, in one of which were three sepoy's armed with Martinis. The lions had become so used to walking into huts that the trap itself was an extra inducement to be bold, and they looked on the sepoy's as bait. The sepoy's lost their heads as the lion bounced about, and blazed off in every direction but the right one, though they could have touched the imprisoned beast with their rifles. At last one bullet hit the catch of the door and released the lion. Another was shot in the back with slugs. A week later it tried to stalk Mr. Patterson, who was sitting in a tree, and after stalking him like a Boer sharpshooter from bush to bush till within twenty yards, was wounded, and next day was killed. The other had been shot by Mr. Patterson shortly before, after the pair had marched round and round him for two hours as he sat up over a kill they had made. It was a huge maneless lion 9 ft. 8 in. long and 3 ft. 9 in. high. Its last meal had been an African native. The other was 9 ft. 6 in. long, and 3 ft. 11 in. high. Both beasts killed men solely for food, though the country round swarmed with every description of game dear to lions. Only when the men had run away, or taken to trees, or slept in iron huts, did they kill goats or donkeys. They ate every portion of the men's bodies except the top of the skull and sometimes the hands. It is said that in the island of Singapore tigers have actually assembled and multiplied in order to eat the Chinese coolies now employed on the plantations. But the records of the East do not supply an instance in which six thousand men and a Government organisation were baffled and defied by two man-eaters.

To what a distance the whole story carries us back, and how impossible it becomes to account for the survival of primitive man against this kind of foe! For fire—which has hitherto been regarded as his main safeguard against the carnivora—these cared nothing. It is curious that the Tsavos lions were not killed by poison, for strychnine is easily used and with effect. Poison may have been used early in the history of man, for its powers are employed with strange skill by the men in the tropical forest, both in America and West Central Africa. But there is no evidence that the old inhabitants of Europe, or of Assyria, or Asia Minor ever killed lions or wolves by this means. They looked to the King or chief, or some champion, to kill these monsters for them. It was not the sport but the duty of Kings, and was in itself a title to be a ruler of men. Theseus, who cleared the roads of beasts and robbers; Hercules, the lion-killer; St. George, the dragon-slayer, and all the rest of their class owed to this their everlasting fame. From the story of the Tsavos River we can appreciate their services to man even at this distance of time. When the jungle twinkled with hundreds of lamps, as the shout went on from camp to camp that the first lion was dead,

as the hurrying crowds fell prostrate in the midnight forest, laying their heads on his feet, and the Africans danced savage and ceremonial dances of thanksgiving, Mr. Patterson must have realized in no common way what it was to have been a hero and deliverer in the days when man was not yet undisputed lord of the creation, and might pass at any moment under the savage dominion of the beasts.

LAW FOR THE PROTECTION OF BIRDS IN THE DISTRICT OF COLUMBIA. The Audubon Society of the District of Columbia has issued a circular embodying the law in question which we have been requested to publish in the OSPREY.

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled * * *

"Section 3. That no person shall expose for sale or have in his or her possession dead, at any time, any turkey buzzard, wren, bluebird, hummingbird, blue jay, robin or migratory thrush, wood or song robin, martin, mockingbird, swallow, oriole, red or cardinal bird, catbird, pewee, whip-poor-will, goldfinch, sapsucker, hanging bird, woodpecker, crow blackbird, or other insectivorous bird, save for scientific purposes upon permit from the Superintendent of Police of the District of Columbia, in accordance with such restrictions as the Secretary of the Smithsonian Institution may prescribe, and excepting the English sparrow; nor rob the nest of any bird of eggs or young or destroy such nest, except in the clearing of lands of trees or brush; nor trap, net, or ensnare any wild bird or water fowl mentioned in this chapter, or have in his possession any trap, snare, net, or illuminating device for the purpose of killing or capturing any wild duck, wild goose, wild brant or bird, under a penalty of five dollars for each wild duck, wild goose, wild brant, or bird killed or captured, or bird's nest and eggs destroyed, and, in default, to be imprisoned in the workhouse not exceeding thirty days."

SEA-BIRDS A SANITARY NECESSITY. We have been requested to publish the following "Appeal to Bird lovers" emanating from a special committee appointed by the American Ornithologists' Union. Contributions are solicited and may "be sent to Mr. William Dutcher, treasurer of the Union, at 525 Manhattan avenue, New York city, who will furnish all desired information."

This country is on the verge of losing forever one of the main features of its seacoast charms—the sea-birds themselves. In fact, the Terns, the most exquisite of the Gull family, and which formerly thronged our whole coast, have been so nearly wiped out by agents of the milliners that this year's onslaught, already fully organized, will glean almost the last pair from the few small breeding colonies which remain, wherever these are unprotected. And the larger Gulls, which are not only very beautiful, but absolutely essential as harbor scavengers, are also being decimated for the same purpose.

All these species, with their exquisite beauty, their wild voices and their most romantic lives,

peopling a realm which, without them, would be oppressive in its dreary grandeur, will reach their breeding places in a few weeks, and the Terns, especially, are liable to be slaughtered the moment they get there; therefore the promptest action is necessary, if we are to save even the few pairs of the latter which could restock our devastated coast when the evil eye of fashion shall have turned to other victims.

Simple economic considerations make it a matter of course that the Gull *must* be saved. An immense horde of them, which naturalists think number anywhere from a hundred thousand to a million, gorge twice a day in New York Bay upon garbage. As the hour of the "dump" approaches, their multitudes fill the whole air to an immense height, over an area of several miles, then gradually settle on the sea in vast white sheets. The whistle of the police boat, the signal to "dump," seems to waft them simultaneously into the air, to gather, like dense snow clouds, over the floating masses just emptied from the many scows.

Imagine from what an amount of putrid matter these birds, as big as hens, save the adjacent beaches, not to speak of their perpetual gleaning in the actual harbors! And this is a specimen of what occurs at every port.

And shall this incalculable sanitary benefit, and all this beauty terminate forever, and for no worthy purpose?

If money enough can be raised, the Committee of the American Ornithologists' Union will guard every breeding place where there is a law to back them, as Mr. Mackay and Mr. Dutcher have done at Vineyard Sound Islands and Great Gull Island.

The utmost caution will be used in choosing wardens, and the Committee will be glad to receive names of men especially suited for the post. Light-house keepers and Life-Saving Station captains will be employed wherever feasible.

A very encouraging sum is already in the hands of the Committee.

The places to be protected are certain Islands on the coast of Maine, Long Island, New Jersey, Maryland, and perhaps Virginia and Florida.

In Maine alone there is need of all the money we can possibly get, since there single wardens are afraid to face the rough plumers, and some more elaborate organization is the only hope.

THE DEATH OF WILHELM ENGELHARD VON NATHUSIUS occurred at Halle on the 25th of December, 1899. He was born on the 27th of June, 1821. He was known to ornithologists chiefly through his investigations on the structure and coloration of the egg-shells of birds.

THE DEATH OF CANON JOHN CHRISTOPHER ATKINSON was not premature inasmuch as he had attained the age of nearly 86 years, having been born in 1804, at Goldhanger in Essex. He died March 31, within a few weeks of the anniversary of his birthday. In the words of *Nature*, (for April 5) "many generations of school boys have derived their first interest in country

matters from his still popular books" on "Eggs and Nests of British Birds" (1861), and the contemporary volumes, *Walks and Talks* [etc.] of two schoolboys (1859), and "Play-hours and Half-holidays" (1860), "all of which are still in circulation."

THE DEATH OF ST. GEORGE MIVART has occurred in the midst of a heated controversy on the relations of Roman Catholicism to science. He died on the second of April, in London, at the age of 73, having been born, also in London, November 30, 1827. As an ornithologist, he was best known to most of the fraternity through his "Birds: the elements of Ornithology" published in 1892. He early instituted original investigations, however, in the anatomy of various groups and its teachings.

His principal contributions to ornithology are "On the axial skeleton of the Ostrich" (1873), the "Struthionidæ" (1874) and the "Pelecanidæ" (1877) in the *Transactions of the Zoological Society of London*. Later he worked especially on the Parrots and published "On the Hyoid Bone of certain Parrots" (*P. Z. S.*, 1895, p. 162-174), "On the skeleton of *Lorius flavopalliatu*s compared with that of *Psittacus erithacus*" (*P. Z. S.*, 1895, pp. 312-337; 363-399), and "On the Hyoid Bones of *Nestor meridionalis* and *Navædés discolor*" (*P. Z. S.*, 1896, p. 236-240). His studies culminated in a beautiful illustrated work—"A monograph of the Lories or Brush-tongued Parrots, composing the family Loriidæ. With 61 plates. London: H. R. Porter. 1895."

Dr. Mivart was born of protestant parents but joined the Roman Catholic Church when 17 years old (in 1844) and completed his scholastic education at St. Mary's College, Oscott, instead of at Oxford where it was intended he should go till his conversion. He became Professor of Biology in University College, Kensington, in 1884, and later, for a short time, was also Professor of the Philosophy of Natural History in the famous Belgian Catholic University of Louvain from which he received the degree of M. D. in 1884. Within the past few months he became alienated from the church of Rome by the publication of heretical articles in the "Nineteenth Century" and "Fortnightly Review" for January, 1900, in which he repudiated papal infallibility and complete inspiration for the Bible. In his opinion "the great peril which Catholicity now runs is occasioned by the deep and appalling disregard for, if not sometimes positive aversion to, scientific truth which is exhibited by Christian advocates, and, high above all, by the Roman Curia." For such and other like utterances and ideas, Dr. Mivart was "inhibited by Cardinal Vaughn—a sentence equivalent to temporary excommunication." He was thereby to be deprived of the sacraments until he should have recanted, and was called upon to sign a long formula or profession of faith prepared for him. He refused to do so and even the threat of excommunication did not seem to terrify him. In the last article but one which has come to our notice—"Scripture and Roman Catholicism"—in the *Nineteenth Century* for March (p. 425-442) he concludes with the assertion "that there is 'till Infallibility is repudiated, an absolute, impenetrable barrier between the domain

of science and the Roman Catholic Church." In his last article—Roman Congregations and Modern Thought—in the North American Review of April (p. 562-574) he puts himself still more decidedly outside of the Roman fold. He ends it with these views:

"The most imperative task for Roman theologians to-day" is to disown the infallibility of the councils and "the Pope's Encyclical" as of "absolutely no account whatever." Then may be evolved "a Catholicity which shall embody all scientific truth and all the religious truths held by all forms of belief, including the beauties and noble precepts of the old Paganism, which men too quickly and carelessly throw aside." This article was published only the day before his death.

THE DEATH OF DR. BERNARD ALTUM will affect economical zoology more than pure ornithology, but he published a considerable number of articles on birds, especially on their relationship to agriculture and forestry. One of his articles was on birds as weather prophets. (*Die Wetter prophezeihungen der Vogel*) in "*Die Schwalbe*" (*Mitth. Ornith. Ver. Wien*), 1890, p. 107-109. His *Lehrbuch der Zoologie* was popular enough to be published in several editions.

THE DEATH OF GEORGE B. SENNETT deprives the American Ornithologists' Union of a prominent and highly esteemed member. He was born July 28, 1840, in Sinclairville, N. Y., and died March 18 last, at Youngstown, Ohio. He was a business man engaged in large enterprises, especially the manufacture of oil-well machinery. This business was carried on for many years in Meadville, Pa., but was transferred some years ago to Youngstown. Much of his time of late years was also spent in the city of New York and his fine collection of birds was deposited in the American Museum of Natural History. This collection was made by Mr. Sennett himself mainly in the field, and particularly in Southwestern Texas. His collection of the birds of Texas and their eggs was indeed conceded to be the largest extant.

Mr. Sennett's writings chiefly related to the birds of Texas. His "Notes on the ornithology of the Lower Rio Grande of Texas" were published in 1878, and followed the next year by "Further notes [etc]". The material and observations thus recorded were intended to be used for an illustrated work on the birds of the great state, and hope may be entertained that the labor and expense incurred therein may not be entirely lost.

Literature.

FAUNE DES VERTÉBRÉS DE LA SUISSE par Victor Fatio, Dr. Phil.—Volume II. Histoire Naturelle des Oiseaux.—Ire. Partie. Rapaces, Grimpeurs, Percheurs, Bailleurs et Passereaux. Genève et Bale. 1899. The long looked for volume of Dr. Fatio on the birds of Switzerland has been published at last. 31 years have passed since the first volume (on Mammals) appeared and 10 years since the fifth (last volume on the fishes) was published. The new volume comes fully up to the high standard set in the previous and will worthily complete the series. As indicated, however, only the first part of the volume is now at hand, but this itself is a bulky book of 861 (xii + 839) pages, a colored map, and a plate representing external parts. The second part, it is promised, will appear soon (*pour paraître prochainement*) but in view of the rate of progress in the past this announcement must not be taken too literally.

The old sequence commencing with the Raptores (= Raptores) is retained and con-

tinued with the Scautores (= Pici), Insidentes (= Cocyges), Hiantes (< Macrochires) and Passeres. The Oscine Passeres of the region studied are distributed among 10 "divisions" including 17 families. We forbear the expression of any difference of opinion respecting nomenclature or classification.

FUR AND FEATHER TALES. By Hamblen Sears. Illustrations by Frost Tavernier & Jacaci.—New York and London: Harper & Brothers, publishers. 1899. [12mo. xii + 217 pp.] This is a handsomely printed and illustrated volume intended especially for boys, and will undoubtedly be welcomed by these into whose hands it may fall. It treats mainly of game birds and animals. Of the five articles, the first ("Henry's Birds") is about duck hunting, and the last ("A little Upland Game") records a trip to "Robins Island" (near the eastern end of Long Island, N. Y.) where the English Pheasant and the Quail were the special game.



THE HOME OF THE BIRDS AND BIRD LOVER IN MAY.

THE OSPREY.

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Original and Selected Articles.

BIRDS OF THE ROAD.—V. HIGH SPRING.

By PAUL BARTSCH, Washington, D. C.

Another month has passed since we handed our last manuscript to the printer and wonderful are the changes which nature has wrought since then. The bleak and dreary aspect of the clayey soil of freshly plowed fields has given way to most luxurious verdure. The trees no longer stretch appealingly their barren arms toward heaven, but droop their branches 'neath a lovely burden of green. The marsh again is green with water loving species and *Zizania* fast sends up her shoots from the mirey beds beneath.

Late, very late, came the change, much more so than usual, but this very fact gave us the unusual commingling of flowers which are wont to bloom a month or more apart. The warm rains which fell for several days sent the sap whirling through the plants and methought I heard the whir of a million factories at work within each field, converting the energy of the falling rain into countless protoplasmic cells. Scarcely could I have been mistaken, for bit by bit, each single blade pushed higher and higher, each leaf stretched farther and farther till all creation was decked in virgin green. Even the cedars and pines imbibed the spirit of the times and changed the color of their steady garb by adding newer, livelier colored, needles and shoots. What a busy workshop each little plant represented at this time and how they worked; there seemed to be no end of growing, until the rain ceased and a lack of water power put a brake to many a mill, whose flour had as yet not half been ground, and this was

The Sparrow's Time.

For now the White-throats raised their voices and many and many a morn and eve we heard their plaintive notes petitioning!

"Hear me, O, Theresea, Theresea!
Sweetly in silver toned notes,
Sad as the wail of a lost soul,
The prayer on the atmosphere floats,"

and felt a closer friendship, a nearer kinship toward them, than we had, when their plain peep greeted us from tangle and hedge. Cardinals and Foxies were both full of song, and the Towhee

Bunting stopped at times his kicking to unravel a few strains from some sapling top. Most cheerful of all were the little Goldfinches; the budding elms had provided a feast for them and they fairly reveled in their summits. They were gay, frivolous little fellows at this time, for this was the season when they exchanged their humble overcoat for a suit of purest gold and black. The Purple Finches too were budding amongst the elms and mingling their notes, which are indeed of excellent quality, with those of the Goldfinch. While in the field the Meadow Lark's pleasing notes were augmented by the whirring song of the aptly called Grasshopper Sparrow. Our Juncos were getting very restless; no doubt they found that they could not compete with the Field Sparrow as vocalists and were getting ready to depart for their mountain home where the pleasing le-a, le-a, le-a, lil, lil, lil, lil, lil, of pusilla will not be heard.

Rains, gently falling rains, just such as plants wish for growing, followed and with the new leaves and flowers came other more brilliant colored birds from the south. Our woods were alive with feathered forms and song and

Warbler time had come.

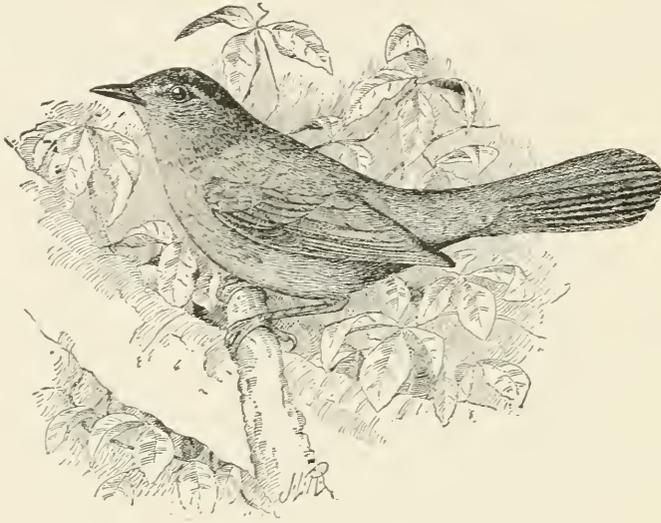
We knew it was coming, for the White-eyed Vireo long since disclosed the secret; babblingly confiding it to the brook. He came and told of the Yellow-throats coming and scarcely had the brook-side vegetation had time sufficient to send out shoots and blades to soften the turbulent murmur of the rill to peaceful lisps and the briery border to don its coat of green before he came with his white boots, his golden breast and his helmet of black and ash to announce with, whit-che-te, whit-che-te, whit-che-te, whit-che-te, wit, that he had come and was glad to be with us and that more were coming.

Our social House Wren soon did follow as did the Thrasher and our faithful Catbird. On the 28th the pleasing why-che-whit-che, why-che-whit-che, why-che-whit-che-way, caused us to leave the breakfast table to bid *Dendroica aestiva* a welcome home again, but we were just in time

to see the Yellow Warbler chased away by a pesky English Sparrow which sealed that sparrow's fate.

On the 29th we enjoyed a twenty mile drive over many a picturesque old country road, we even managed to get lost in the eastern outskirts of that beautiful timber area to which we referred in our last month notes. We crossed the fill and bridge at Bennings and paused just

seems as unconscious of his song as he is of his curious prying manner. His Vireo nature and loud, whit-che-we-wa-wit, or the long drawn, che-we-a, which usually follows a succession of repetitions of the first, will mark him, even though you fail to see the white iris of his eye. The Black and White Creeping Warblers were very abundant: their thin wiry voices proclaimed the fire within. It was their mating time. Mr.



Our Faithful Catbird. *Galeoscoptes carolinensis*.
(From Bulletin of Division of Economic Biology D. A.)

long enough to take a picture and a look at the tranquil scene which lay before us. To the north stretched the broad expansive tidewater waste. It being high tide, none of the unsightliness and desolation of the opposite phase was present. Not a ripple marred the mirrowy surface and the points and islands— as well as the distant hills and the white castle-like reform school, with now and then a fleeting fleecy cloud, were reflected from the surface of the stream.

A pair of ducks could be seen among the beds of old dead weeds near shore, from which place they sent gradually ebbing ring upon ring far out over the glassy surface. Swallows of divers kinds were skimming high and low, and even while we were watching, an Osprey sailed over, circling time and again, scrutinizing all the while the clear waters beneath, for its finny prey.

We followed the river road toward Anacostia from Bennings, and enjoyed the rough shady way with its many a glen and dancing brook, each one of which had its avian chorus. How delightful it is to pause and listen to the many voices all about you,—the song of birds, the hum of bees, the murmuring of the rill, all mingled with the whispering of the breeze stirred leaves,—they are sweeter far than any music which human hand or brain can produce. The most conspicuous voice in such a place is without doubt that of the White-eyed Vireo, though he

Mniotilta has little time to spare apparently, for he sets to house-keeping almost as soon as he arrives: at least he urges his chosen spouse to household duty. The Waxwings are less industrious in this respect, for they still remain in roving bands. They have changed their habits,—for no longer does the blackberried Smilax have charms for them,—they have removed to higher regions and now perform the functions of Flycatchers. From the tip-top of tall trees they launch into the air and give chase to the luckless insects which may pass their way. In the deeper cuts of the road, fringed by dense hedgerows, we find White-throats and Juncos fleeing ahead of us as we approach. An occasional Song Sparrow is seen amongst them.

We turned toward Overlook Inn when we reached Pennsylvania avenue extended, and paused to listen to the medley in the deep shady retreat which borders the splendidly kept road leading to this resort. The old music teacher, for as such does the Golden Crown Thrush always appeal to me, beat time as it were, to the rest of the vocalists. The tiny Red-start in his flashing dress was announcing his presence with his periodic musical eruptions while from a not too distant pine coppice the Prairie Warbler added his quavering notes with rising inflection. Best and purest of all were the deep silvertone bell-like notes of the Wood-thrush which came clear and full from the deep shade of the over-

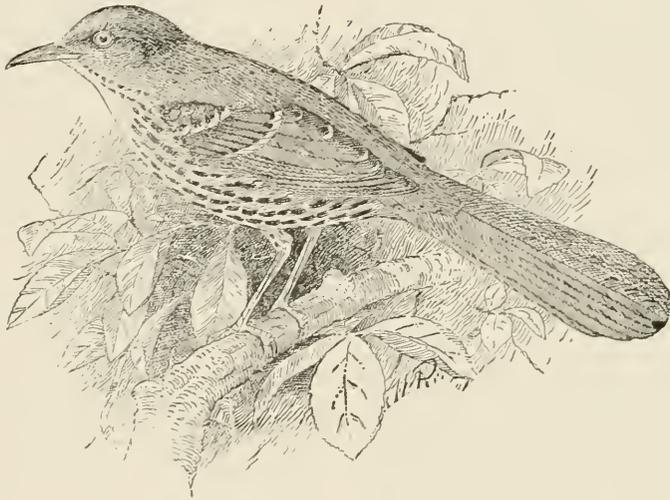
arched rill. What would our glens be without this calm sweet singer whose voice never fails within its season? It brings peace, harmony and quiet to your overtaxed nerves as stretched out upon the green turf, you listen to his liquid melody.

At Overlook Inn we viewed the city and noted the universal change which the last month had produced. No longer did the gray asphalt mark the long streets and avenues, but green bands, above which the housetops peeped forth, indicated the thoroughfares of the town. We also watched the Turkey Buzzards in their gyrating flight and envied them for their grace; they embody the very poetry of motion.

Leaving the busy Metropolis behind us, we turned to Goodhope and thence to Silver Hill. We crossed Oxen Run with its extensive valley, and from the next eminence had a panoramic view of many a hill and dale. Most of the birds alluded to before were habitués of each shady nook, and a few orchards, which were now

wood-bound path. The oaks had hung long festoons of pollen-bearing stamens to the wind and their tender young green leaves furnished outstretched branch which will contain the prettiest eggs of all; so pretty are they, in fact, that it scarcely seems possible that so homely a bird as a young Wood Pewee could ever emerge from a shell so richly marked. This bird will keep the woods from seeming utterly dead when the noon-day heat of summer will silence all the rest, for it is then that this somber wee gray thing takes a leading role.

Every grove, every bunch of trees, seemed to have its quota of Red-eyed Vireos, and many proclaimed the presence of the slower member of the genus, which stops to swing its rocking cradle from our boughs—the Yellow-throated. The Warbling Vireo, which at this time frequents the roads and parks of our busy city, and tenders ever so often its pleasing song to the passer-by, is also present, and often announces this fact from its shady retreat.



The Thrasher. *Harporhynchus rufus*.
(From Bulletin of Division of Economic Biology D. A.)

a welcome retreat to the passing Warblers. The Black-throated Green in particular favored them, while the low dense pine-growth sheltered the somewhat belated Yellow Red-poll, and the intermediate ground, particularly in ravines, the beautiful Black-throated Blue. Brilliant Scarlet Tanagers were often seen and also heard sawing off a piece of their song. We were again favored by the presence of *Coeophloeus*, as well as some of the lesser folk of his habit, the two Nut-hatches, *canadensis* and *carolinensis*, the first a migrant, the last a resident. Now and then we heard that plaintive sad but pleasing note which the Wood Pewee calls his own, and we knew that he too had returned to build his cosy lichen-stuccoed nest upon some shedding their snowy petals in flowery showers, added several pairs of Bee Martins and a few pleasing Bluebirds to our list.

Turning to the right we entered the timber proper and we drove for several miles over a

In these sylvan dells, we occasionally saw the fleeting forms of Thrushes, too shy or seclusive to permit us to approach them close enough with the buggy, to determine their given name.

We returned to the city by way of Oxen Hill, Congress Heights, and Anacostia, having noted seventy-three species of birds in this single day. To speak of all of these would require more space than the editor of the OSPREY could spare.

A SUNDAY MORNING AT HOME.

It is the 6th of May. Still is the house! Old Sol has not yet risen! I have donned my suit and stepped outside to catch perchance enthusiasm from nature to feed the glowing embers of happiness within and warm the soul in morning's ruddy glow. It is cool—quite cool for the season—and heavy dew covers all the ground. To the orchard I repair and seating myself on an old stump I listen to the melody of

the morn. A Thrasher has sought the highest top of the tallest tree whose young green tips are just beginning to reflect the slanting rays, announcing the glory of the approaching king of day. Happy—most happy—does he seem up there in his elevated position and loudly does he express his joy of the new born morn. The giddy Catbirds, wild with love, are raging mad and what a jumble of notes is their's as they chase each other about the orchard and the lawn, and what a demand they lay upon their tail not a single mood or thought, but what this member is called into requisition to add emphasis and expression to the idea which is momentarily coursing through their brain. How different, how calmly majestic and serene in comparison, is the Wood Thrush, which now, from his chosen glen, greets the morn with his molten melody.

"As he sings with flute-like thrill
 "Eolie—Eolie!"
 List the air grown hushed and still;
 Listen in the vale the rill;
 List the trees on plain and hill
 "Eolie!"
 And his note the wild flowers thrill
 As so clear so soft sings he
 "Eolie—Eolie!"

The Chippy sends his quavering beat and the House Wren mounts an elevated twig, where, with distended throat, he sings his morning psalm, and many others join in the refrain. A whole band of Gold Finches proclaim the glory of Old Sol from yonder giant elm, while the

first Hummer of the season hums his approval of the whole, and of the apple tree now decked in flushed snowy bloom. A finer note proclaims the presence of a Black-poll Warbler, and the soft sweet tones that of the Yellowbird. There is a lull in all this medley, as a boy, piping his tune, crosses the lower edge of the orchard, but in this short interval the distant trill of a Field Sparrow and the happy rollicking note of a Flicker are heard from afar. The martial Robin seems provoked by the whistling boy and shows his presence by soundly denouncing him. I suspect the recent silence of the Robin has a deeper meaning, and shall inquire into his domestic affairs a little more closely hereafter. Our sweet voiced ever babbling, ever pleasing Red-eyed Greenlet continues to delight us with his merry unassuming notes, and the wouldbe owner of the orchard by a sudden outburst of a lively air eclipses his fiery cousin, the Baltimore Oriole, who now and then enters into competition from the cotton wood in the glen.

One by one these feathered minstrels join their notes until the aisles and arches of natures own cathedral ring with joy and praise. There is not a discord in the whole, be the voice weak or strong, from the tiny squeal of the Hummer to the loud harsh call of Myiarchus, or the croak of the Crow; each one fits and is fitted to its surroundings and fills a place in the grand symphony of the early morning.

NOTES ON THE HABITS OF THE BLUE JAY IN MAINE.

BY J. MERTON SWAIN, Portland, Maine.

The difference in the habits of the Blue Jay (*Cyanocitta cristata*) especially during the breeding season, here in Maine, and in the more southern and western states, has often been remarked upon, though I have seen but very little written on its difference in habits. This bird is a resident throughout the year in this state. In the autumn it is seen and heard very plentifully about the woods, sometimes in pairs, and often in small flocks, and they are very noisy as they alight in the top of some tall tree and utter their loud shrill call, Kee-Kee-Kee, or Jay-Jay-Jay, and hurry on to some other part of the wood or field. Oftentimes their call is answered by a flock from a hill-side not far away. They are associated in my mind with the dropping of Beechnuts, and the rattle of acorns, and the rustle of the falling leaves, along the hill-sides and banks of our streams and rivers.

Every sportsman has reason to remember this elf of the woods, as he wends his way through the haunts of the Woodcock or Ruffed Grouse, with eye and ear alert to catch sight or sound of these fine game birds. Perhaps just as he is about to flush from one or two to eight or ten Grouse, who have not yet been scattered from each other by the gunner, a Blue Jay will suddenly drop into a tree over his head and will set up such a shrill, startled cry, and will soon be joined by half a dozen birds all scolding and making such a fuss, that the exact whereabouts of the sportsman is known to the Grouse in his vicinity, and they will be on the alert for him.

Often the gunner becomes provoked at the Jays and the Jay get shot instead of the Grouse. When one goes to the woods along some wood-road in the winter, he is greeted with the cry of this bird, and it sounds very cheerful as there is so little bird life to be seen at this season. They frequent the lumber camps at this time of the year, but are not as mischievous and free as their cousins the Canada Jay (*Perisoreus canadensis*.)

When I was a boy in school, Saturdays I often went into the woods with my father's men who were chopping wood, or cutting or hauling lumber, to watch the few birds I found there. I found the White-breasted Nuthatch, and Chickadee, Downy Woodpecker, Pine Finches and Grosbeaks, and the Redpolls, also the Ruffed Grouse; but the most common bird to be seen was the Blue Jay. Sometimes I set a steel trap on stump or stone, and sprinkled a few kernels of corn on the trencher, and would hardly get out of sight of my trap when I would hear an uproar among the Jays, and returning would find a Jay caught fast by the bill or leg. I used a weak springing trap, and would cloth about the jaws of it so as not to break a beak or leg. When one was caught the "posse" would be very shy of grain on the rocks or stumps, and I had to sprinkle grain about for several days without a trap before they would venture near one again. Frequently while in the woods in the fall, winter or early spring, I have heard Jays imitate the cry of the Red-shouldered

Hawk. So near would their cry resemble a hawk's, I have often looked about to see if there was a hawk, when I would discover the mimic.

In the spring, however, as noisy as they have been, and as common as they seem to have been, they seem to all disappear, and any but the very keen, careful observer, would consider they had all left for other parts to breed. They become very quiet and shy, and hardly a bird is to be seen, and not a sound is to be heard, except perhaps one may hear a sort of stifled sound which one would almost believe was that of a Blue Jay, but as none are seen or heard he thinks he is mistaken. Every bird student has a territory that he likes to term "his preserve". The writer had one such near his old home at Farmington, Maine. It was a low, wet tract, with here and there a patch of grey birches, willows, black alder, blackberries, and a wet boggy slough profusely fringed with cat-tails, and an abundance of poison ivy all through the place, and well covered with patches of golden-rod. On the other side was a dense growth of poplars and maples, with here and there a patch of firs and hemlocks, and an occasional spruce, and bordering on the Wilson stream. The atmosphere was made musical by the ever present mosquito, that had the audacity and persistence of the average mosquito. It was a dark, quiet strip of woods, very solitary and lonesome, but not so to me as I spent much time pleasantly there in search of the bird-life that was so abundant. I spent a great many mornings and whole days in this place, among the birds, for several years before I became aware that there was a pair of Blue Jays nesting there. One morning in May 1889, as I pushed my way through the grey birches on the upper side, I heard a stifled sound that seemed like that of a Blue Jay. Soon I saw a rather shallow looking nest, that looked unoccupied, in the top of one of the slim birches, about ten feet up. I pulled the tops of several trees together, to hold my weight, and went up to the nest. I found two eggs in the nest. Immediately two Jays dropped into the tops of the bushes near me, and set up a great cry at my disturbing the nest. Before I reached the nest, not a sound except the single note, was heard and I had not supposed there was a Jay in that vicinity. The eggs were incubated; at least one was. It was normal in size and coloration. The other was about one fourth size smaller and

had a heavy wreath of spots about the smaller end. It was also more pointed at the smaller end, and was addled.

June 13, 1893, I found their nest not far from the site occupied in 1889. This nest was in a fir bush five feet ten inches from the ground. It was composed of dead twigs of the alder, coarse roots mixed with a few bits of bark, lined with fine dark roots. This nest contained but two eggs, of the usual size and coloration. In June 1898, I found a nest in a spruce bush among the dense growth of alders, with four eggs nearly ready to hatch. And June 17, 1889, their set of three was complete. The nest was about two rods from the nest of last year.

I have examined two other nests of this bird in Franklin County. One was on a long bare ridge or ledge with a scanty growth of sweet ferns and grey birches; a lonesome out-of-the-way place, not far from the railroad track. I saw the nest, but thought it an old one, and passed it by, but had not gone far when I retraced my steps and pulled it down within reach. It contained two eggs that were both addled. The two birds mysteriously appeared, and protested against disturbing their nest. Another nest was in a dense growth of fir bushes. A friend found it. It contained four eggs, much lighter in color than any I had ever seen before. They were colored much like, and quite resembled the eggs of the Virginia Rail. He left the nest undisturbed, but when he showed it to me a few days later, no birds could be seen. We watched for them for several days, but they did not come back to the nest.

If the female is on the nest when found, she will usually remain till one gets very near to her; then she flutters off to find her mate, which is not far off. Then both return and put up a big fuss against being thus disturbed. They remain quiet and solitary while rearing their brood, then return early in September to the orchards and haunts of man, and become as noisy as ever. They are more common breeders in the state than is supposed, but they are so shy and retiring and so quiet during this period, that one may pass to and fro many times and entirely overlook them. They destroy the eggs of some of our song birds, but otherwise the damage done to the agriculturist is not of much account.

WILLIAM SWAINSON AND HIS TIMES.—III.

BY THEODORE GILL, Washington, D. C.

(Continued from page 123.)

The aggregate of the birds enumerated by Von Penzeln as collected by Natterer alone reached up to no less than 1,680 species. Many other species have been added by other naturalists and the Brazilian birds thus represent the richest of the world's avifaunas.

The next in extent—that of India—furnished only 1,626 species up to 1898.

And Natterer did not confine himself to collecting birds. He likewise made large collections of mammals, reptiles and fishes as well as

other objects and enriched the Museum at Vienna so that it long excelled all others in Brazilian Vertebrates. That most remarkable amphibian fish, *Lepidosiren paradoxa*, was first obtained by him, and was so long unrepresented in other museums that its very existence was called in question.

Natterer, indeed, was one of the "born collectors" and his like we can never see again, for no region of the earth remains unexplored as it did in his day.

ZOOLOGICAL ILLUSTRATIONS.

Instead of proceeding immediately to the systematic elucidation of the collections he had made, Swainson determined on a publication which would only incidentally treat of the forms he had brought together.

His friend, Dr. William Elford Leach, a versatile and accomplished naturalist, the keeper of the Zoological Department of the British Museum, had published for several years (1815-17), in three volumes, *The Naturalists' Miscellany*. As partly indicated by the title, the series was composed of "miscellaneous" or disconnected notices of animals, some new and others interesting for some reason or other; these were the accompaniments of plates, mostly colored, and generally there was a leaf of text to each plate. The precedent for such a publication had been set by Leach's predecessor in the British Museum, Dr. George Shaw. It was suggestive for Swainson and he resolved to do likewise. He has given the steps of progress in the following words.

"It was about this time that the art of lithography was first introduced in England.* Encouraged by my friend Dr. Leach, I determined to try how far it might be used in producing zoological plates fit for colouring. My attempts succeeded; and the first series of the *Zoological Illustrations* was the result. As I took upon myself the whole expenses and management of this work, I soon found that its publication, in monthly numbers, rendered it necessary I should superintend all its mechanical details; I therefore quitted Liverpool, and took lodgings in Surry Street, Strand, where I lived nearly the life of a 'hermit in London' for two or three years. The late hours, and style of visiting customary in the metropolis, neither suited my health, or the steady prosecution of my work. I laboured hard, during the greater part of the year, to enjoy the leisure of autumn among my family and friends. My little book was favourably received; and, thus encouraged, I brought out the early numbers of *Exotic Conchology*. The uncertainty, however, which then attended the lithographic process was so great, that after being frequently obliged to draw the same subject two or three times before the printer produced a tolerable impression, I was compelled to suspend the publication, and confined myself to the *Illustrations*."

These Illustrations were issued in parts of six plates each; the text was confined to one leaf and generally to the page opposite the plate. First the specific name was given; under it the English name; next the "generic character," first in Latin, and under that in English; then the "specific character," likewise in Latin and English, and, lastly, comments. Eleven numbers constituted a volume, and the equivalent of a twelfth number consisted of title pages, preface, "general index in the order of publication," and "general alphabetic index." For the benefit of those who should prefer to bind the plates according to subjects, three special title pages were furnished as well as a "systematic

index" for each—*i. e.* for the "Vertebrosa," "Entomology," and "Conchology."

The plates of this work were greatly superior to those of most of the illustrated works of the time, generally the drawing was good, and the coloring well applied. There was also, on the whole, continued improvement with the progress of the series.

Swainson's character, as well as the character of the work under consideration, may be better appreciated by a brief analysis of the Illustrations.

72 plates are devoted to "Vertebrosa," (so he calls vertebrates,) all except 2 being of birds; 39 illustrate insects, and 93 shells.

Of the 69 species of birds, 39 are American—tropical American—and are represented in 40 plates, the two sexes of his *Trochilus latipennis* (*Campylopterus largipennis* of Boddaert) being represented on separate plates (130, 131). Of the 39 species, only 10 (nos. 19, 20, 21, 25, 78, 82, 116, 117, 138, 141,) are explicitly declared to have been collected by himself in Brazil. It is noteworthy that for those species no details respecting habits or mode of occurrence are given. The mere statement that a species is common in Brazil does not necessarily imply that the specimen illustrated was obtained by Swainson in that country. For example, a bird named *Nectarinia flavola* and identified with the *Certhia flavola* of Gmelin a species of the genus which has been generally called *Certhiola*—is not the common *Certhiola* (*C. chloropyga* Cab.) of Brazil but was declared by Mr. Ridgway, on consulting with him, to be the *C. martinicana* of the island of Martinique; a comparison of the plate (142) with specimens of that species proved that the figure well illustrates that form which differs markedly from the only Brazilian congener known. Inasmuch as Swainson declares that "this pretty little bird, under different varieties of plumage, appears to be scattered over the greatest part of tropical America, and is one of the most common of its tribe," it might be supposed naturally that he procured specimens and that the specimen figured was one of them. Nevertheless, for some reason he selected the specimen figured which, he says, "I believe came from Trinidad." His belief (in so far at least as it implied original provenance) was therefore mistaken.

Of the 40 plates of American species, 14 (nos. 19, 56, 89, 99, 100, 108, 115, 116, 117, 130, 131, 142, 169, 173,) are yielded to the illustration of previously known or supposedly known species. Generally the identifications are correct, but one species supposed to be identical with an old one proves to have been distinct and has been named after Swainson (*Bucco Swainsonii* figured on pl. 99).

Of the 26 supposed "new species", 12 (nos. 1, 21, 38, 49, 82, 83, 138, 139, 140, 141, 148, 174) had been previously described and Swainson's lapses resulted partly from insufficient knowledge of the literature and partly (therefore excusable) from the imperfection or insufficiency of the descriptions previously published. The percentage of error under the circumstances was not extravagant.

*Lithography was introduced into London in 1807 and it soon became "fashionable for the nobility to design on stone." Its secrets, however, were preserved as much as possible.

Generally Swainson's appreciation of affinities was not bad. Sometimes, however, he hit quite wide of the mark. For instance, two of his species of *Procnias* (25, 37) did not belong to the same family or great group of birds as the type which, nevertheless, he had for comparison, and indeed figured on a neighboring plate (21). A similar fault was manifested in the reference to the Wrens (140) of a bird which, though like a Wren superficially, is very unlike one in structural characters and belongs to a widely distinct family (*Fornicariidae*) peculiar to tropical America.

Swainson's delay in publishing the results of his expedition was unfortunate for himself. Meanwhile, some of the forms new when he began his explorations had been made known by others. As he remarks in the "Preface" (1823) to the third volume of his *Zoological Illustrations* (p. vii) "a great part of the new objects collected during [his] travels in Europe and Brazil [had] recently been made public by Messrs. Temminck and Godart", Temminck having described the birds and Godart the butterflies. It is noteworthy that he preferred to draw from the collections of others rather than from his own. Especially did he avail himself of the privilege of using the Bullock and Leadbeater Museums. The "many entirely new species" of Trochilids, the "two or three new Toucans" and the "singular Goatsucker" were mostly neglected. Of the seven Toucans illustrated, only one was obtained in Brazil and that by Langsdorff and of the five Trochilids only one. The singular Goatsucker with a tail doubly forked" was never described by Swainson, but was probably that named in 1837 (*Nat. Hist. Birds*, i, 105; ii, 339) *Psalurus bifurcatus* Sw. Sp. Nov." If we may be allowed to guess what it was, (and we have apparently the representation of the tail to help us,) we may infer that it was merely the ordinary *Hydropsalis torquata* of Eastern Brazil—the same as he had also named *Psalurus macropterus* when he took Temminck's *Caprimulgus psalurus* as the type of his supposed new genus *Psalurus*.

Swainson is thus seen to have been by no means well informed as to the aspects of Brazilian ornithology when he made his first estimate on reaching home.

In these Illustrations, Swainson ventured to make few genera, although there was ample reason for some, especially for the reception of two of his species of *Procnias* and his *Troglodytes rectirostris*. The only genus of birds established was *Halcyon* (pl. 28), since universally adopted. Among Butterflies he founded several and in conchology one (*Conchiliv*).

All the South American birds, except *Nectarinia flavicola* (142), figured in the Illustrations (1820-1823) are identified in the British Museum Catalogues and references to the volumes and pages are now appended, (e. g. 20, 264=vol. 20, p. 264); most of the names therein used are essentially those which would be adopted by American ornithologists, but instead of (78) *Dendrobates*, (previously used for a well-known genus of South American toads,) *Venilliornis* would be substituted and (154) *Geothlypis vetula* should be replaced by *G. cucullata*. The species

names without nomenclator's names following were given by Swainson as new; those with authorities express Swainson's views.

AMERICAN BIRDS OF ILLUSTRATIONS.

1. *Psittacus cayennensis* [= *Brotogeris chrysopterus* (Linn). 20, 264].
Cayenne.
7. *Carduelis cucullata* [= *Chrysomitris cucullata* Sw. 12, 225].
Spanish Main: E. Falkner.
14. *Picus rubiginosus* [= *Chloronerpes rubiginosus* Sw. 18, 86].
Spanish Main: E. Falkner.
19. *Tinamus Tataupa* (Temminck) var [= *Ib.* 27, 525].
Bahia!
20. *Picus Brasiliensis* [= *Chloronerpes brasiliensis* Sw. 18, 73].
Bahia!
21. *Procnias hirundacea* [= *Procnias tersa* (Linn). 11, 50].
Bahia!
25. *Procnias melanocephalus* [= *Ampelion melanocephalus* Sw. 14, 374].
Bahia!
31. *Phibalura cristata* [= *Phibalura flavirostris* Vieill. 14, 372].
S. Am.: Miss E. Yeates.
32. *Psaris cuvieri* [= *Pachyrhamphus viridis* Vieill. 14, 338].
Brazil.
37. *Procnias cucullata* [= *Ampelion cucullatus* Sw. 14, 374].
Brazil: Miss E. Yeates.
38. *Picus bicolor* [= *Melanerpes candidus* Otto. 18, 148].
Brazil: Sent Sw. from "Minas Geraies."
44. *Pteroglossus sulcatus* [= *Aulacorhamphus sulcatus* Sw. 19, 154].
Spanish Main.
45. *Ramphastos carinatus* [= *Ib.* 19, 125].
[Central America, etc].
49. *Oxyrhynchus cristatus* [= *Oxyrhynchus flammeiceps* Temm. 18, 281].
Brazil!
56. *Ramphastos vitellinus* Ill. [= *Ib.* 19, 132].
Hab. unknown: [Venezuela, etc].
78. *Picus affinis* [= *Dendrobates affinis* Sw. 18, 362].
Brazil!
82. *Trochilus niger* [= *Florisuga fusca* Vieill. 16, 331].
Brazil!
83. *Trochilus falcatus* [= *Campylopterus lazulus* Vieill. 16, 292].
Bullock's Museum.
89. *Psittacus murinus* Gm. [= *Myopsitta monachus* Bodd. 20, 231].
90. *Pteroglossus inscriptus* [= *Ib.* 9, 146].
"Interior of Guyana": Bullock.
99. *Tamatia macrorhynchus* ex Gmelin [= *Bucco Swainsonii* Gray. 19, 181].
S. Brazil.
100. *Xenops genibarbis* ex Illiger [= *Ib.* 15, 110].
"Inhabits Brazil but is rare."
105. *Trochilus recurvirostris* [= *Arcoctula recurvirostris* Sw. 16, 101].
Peru: Bullock. [Guiana].

107. *Trochilus ensipennis* [= *Campylopterus ensipennis* Sw.—16, 290].
Hab. unknown: Swainson's coll.
108. *Ramphastos dicolorus* Linn. Gmelin [= *Ib.*—19, 133].
S. Brazil: Langsdorff.
115. *Platyrhynchus caneromus* ex Temminck [= *P. mystaccus* Vieill.—14, 67].
Brazil: Leadbeater.
116. *Muscipeta barbata* ex Gmelin [= *Myiobius barbatus* Gm.—14, 199].
Brazil!
117. *Nectarinia cyanocephala* ex Gmelin [= *Dacnis cayana* (Linn.)—11, 19].
Brazil!
- 130-131. *Trochilus latipennis* ex Latham [= *Campylopterus largipennis* Bodd.—16, 288].
Cayenne. [Guiana].
138. *Malurus garrulus* [= *Phacclodomus rufifrons* Max.—15, 80].
Bahia!
139. *Sylvia plumbea* [= *Parula piliayumi*.—10, 259].
Brazil: Leadbeater.
140. *Troglodytes rectirostris* [= *Rhamphocœnus melanurus* Vieill.—15, 260].
Brazil: Leadbeater.
141. *Pittacus chryseus* [= *Urochroma surda* Ill.—20, 354].
Pernambuco.
142. *Nectarinia flaveola* (ex Gmelin) var [= *Certhiola martinicana* Reich. fide R. Ridgway—11, 46].
Trinidad? [Martinique.]
148. *Emberiza cristata* [= *Gubernatrix cristata* Vieill.—12, 815].
"Purchased alive at one of the Brazilian ports" but probably "brought from Africa." [Argentine Republic.]
168. *Ramphastos ambiguus* [= *Ib.*—19, 128].
Hab. unknown. [Colombia to E. Peru].
169. *Pteroglossus viridis* ex L. Gmelin [= *Ib.*—19, 147].
Demerara: Edmonston.
173. *Gallinula ruficollis* (ex Gmelin) var [= *Aramides [cayana] chircote* Vieill.—23, 58].
Brazil: Langsdorff.
174. *Tanagra canicapilla* [= *Gothlypis velata* Vieill.—10, 363].
"Not uncommon in the W. I". [Not so. Brazil and Argentina].

EXOTIC CONCHOLOGY, ETC.

More space has been given this maiden work of Swainson than can be afforded to others. It will be seen that he started out in his scientific career with what would be considered conservative ideas as to genera and species and without any "philosophical" manifestations. He had not yet become afflicted with or at least did not exhibit symptoms of the monomania, he became subject to during most of his autorial life.

As already indicated Swainson commenced an illustrated serial on shells (in 1822) before he completed his *Zoological Illustrations*, but was obliged to suspend it. He resumed it later and completed it in 1835 with six parts.

In this work, called "Exotic Conchology", he commenced the illustration of the Volutes and he intended "to complete a copious illustration of this noble family of shells; which (if the simile be admissible) may be termed the nobles of testaceous animals, with as much truth as Linnaeus has called Palms the princes of the Vegetable World." (*Zool. Ill.*, pl. 161). This intention was not fully carried. The plates, so far as published, were of superior execution.

About the same time (1812) he also furnished on appendix to a catalogue of shells formed by Mr. Bligh which was sold at auction in the spring of that year. In this he diagnosed some new special of shells several of which he figured in his "Zoological Illustrations" (see pl. 144, 146).

(To be Continued.)

THE CHICKADEE (*PARUS ATRICAPILLUS*) IN EASTERN NEBRASKA.

By M. A. CARRIKER, JR., Nebraska City, Neb.

The Black-capped Chickadee (*Parus atricapillus*) is an abundant summer resident of the eastern part of Nebraska, frequenting chiefly the timbered land along the Missouri River and the streams and creeks flowing into it.

It is almost impossible to tell when they arrive and when they leave; for the reason that many, breeding farther north, spend the winter here, and as they leave in the spring for their northern haunts, more drift up from time to time from the south; so that never does there appear to be any decided movement.

I am convinced also, from the manner in which they obtain their food, that they do not cover any great distance at one flight, but make short stages, feeding as they go along, and whenever possible following the course of a stream.

During the late autumn and winter and early spring, before the breeding season, they are very noisy.

I am seldom in the woods during the above-mentioned season that I do not see a troop of from three to six or seven flitting along in their peculiar jerky and halting manner, searching industriously along the tree trunks and limbs for the grubs hidden under the bark, while ever and anon, breaking forth in a crisp decided manner with "Chick-a-dee-dee-dee," sometimes clear and full, and again hurriedly running the syllables together, but ever with that cheerful and energetic tone which endears him to all birdlovers.

During the coldest part of the winter they remain hidden away in some wind-sheltered valley, covered with a thick growth of timber, but in the sunny days of November, March and April they seek out the apple orchards and in company with *Dryobates pubescens* and *D. villosus* devour great quantities of injurious grubs, and during the intervals of search, gathering in noisy groups, scolding in their accustomed manner at some avian intruder.

After the chilling blasts of winter are over and the sunny days commence in the latter part of February, March and April, they give voice to their delight in a manner which I have never observed in any other month of the year. It is a call very similar to that of *Sayornis phoebe* except that it is louder, clearer, and much more distinct, consisting of two clear sweet notes, pitched rather high; the second about a half tone lower than the first and both in a distinct minor key.

I never heard it in the late winter days, but that it sends a joyous thrill through me, awakening pleasant memories and giving rise to eager anticipations of spending many happy hours in the search for their nests. It is almost equal to being awakened some bright March morning by a Robin, pouring out in joyous abandon its sweet melody, as it sways back and forth on the topmost twig of a nearby tree, bathed in the first rays of the rising sun.

I always begin to look for their nests just about the time I have finished with *Buteo borealis* and have been getting full sets of *Corvus americanus* for a week or ten days; in other words, from the 15th of April to the 1st of May, according to weather conditions.

In 1896 we had a very early spring and my first full set was taken April 18th, while in 1898 it was much later, May 15th.

They are more or less irregular in their breeding, owing to the straggling manner in which they make their arrival.

The length of time for getting first full sets ranges from fourteen to seventeen days, and I have never found sets later than this period, except of birds whose first sets I had good reason to believe had been taken. Thus my observations would tend to strengthen the belief that but one setting is deposited in a season, except where this is taken, when two and even three sets may be laid; but in this case the later sets are almost invariably small, seldom ever containing more than four or five eggs.

The nesting site is generally chosen near some stream or pond, but often in orchards quite distant from any water. Out of about fifty-seven nests observed during the past four seasons, there were but fourteen found any distance from water, nine of these being in orchards, and the other five in heavy timber.

A dead stub of a willow tree is preferred, although the stubs of hickory, cottonwood, linden, and wild cherry are not infrequently made use of.

The highest nest found was 30 feet from the ground, the lowest 1 foot, while the average height is 8 feet.

I have never found them nesting in natural cavities in any tree except the apple and have no positive evidence of them ever using the cavities of any of the *Picidae*.

The cavity is from 1.25 inch to 1.75 inch in diameter at the entrance, widening downward to 2.50 inch to 3.50 inch at the bottom, with an average depth of 6 inches.

The structure and material of the nests in this locality is almost invariable.

The nest is first formed with sides and bottom of fresh green moss, and then lined with soft hair of the rabbit, cow, horse or any other animal that may chance to leave its hair caught on fence or limb. The earlier in the season the nest is made the more hair is used in making it, with less of the moss, while those later are just the reverse; nests made for second sets are nearly always very frail.

From the data of forty-seven sets, the number of eggs to the set ranges as follows:

No. of Sets.	No. of Eggs in Set.
Seven.....	4
Ten.....	5
Nineteen.....	6
Eight.....	7
Two.....	8
One.....	9

This gives the average number of eggs to the set as six.

The female does not commence incubation until all of the eggs have been deposited, and until that time the eggs are kept covered with a layer of hair taken from the nest lining.

This hair is pushed to one side whenever an egg is deposited, which is daily, and afterwards replaced.

This may be taken as an infallible sign as to the completion of the set, unless the bird is flushed while laying, without having had time to replace the covering.

Incubation is completed in fourteen days, and during this time the female seldom leaves the nest, being fed by the male. In many cases she has to be removed by force, especially when the incubation is advanced.

As in the case of all birds whose incubation is short, the young are soon fledged.

REMARKS ON SOME OF THE BIRDS OF THE CAPE OF GOOD HOPE.

BY PHILIP LUTLEY SCLATER, London, England.*

Mr. Sclater gave a short account of his recent journey to the Cape of Good Hope, and concluded with the following remarks on some of the birds of the Cape peninsula:—

"In the suburbs of Capetown and in the immediate vicinity of that city, where I spent the greater part of my short stay in South Africa, birds, it must be confessed, are by no means abundant, either in species or in individuals.

Although I was always on the look out for them and made short excursions into the surrounding country nearly every day, mainly for the purpose of observing them, I did not succeed in recognizing positively more than from 20 to 25 species, and of some of these I saw but very few examples.

"The commonest and most pervading bird in Capetown and its vicinity at the time of year

*Reprinted from *The Ibis* (7), April 1900, VI, 365-368.

when I was there (September and October answering to our March and April) was certainly the Cape Dove (*Turtur capicola*). The somewhat harsh and grating love-call of this species could be heard at all times of the day, both in the city and suburbs, although it was not always easy to discover the exact position of the utterer. The call is something like three syllables 'kah-kay-zhoo,' with the last note much prolonged. The bird was evidently intending to breed everywhere, like our Wood-Pigeon in the parks of London and Paris. I also occasionally saw and heard a rather smaller Dove with a much softer and quite different call, which I take to have been *Turtur scagalis*.

The other birds that I most frequently noticed in the gardens at Capetown were the Cape Sparrow (*Passer arcuatus*), the Cape Wagtail (*Motacilla capensis*), and the Collared Shrike (*Lanius collaris*).

The Cape Sparrow is certainly not nearly so abundant as its British representative in London, but seems to have nearly similar habits. It was commencing to breed in the gardens, and builds nests similar to those of its European ally. The Cape Wagtail may be seen pursuing insects on the well-kept grass-plots surrounding the Parliament House, and is quite tame and familiar.

The Collared Shrike, which I saw every day on passing through the Municipal Gardens up to the Museum, shows its pied plumage well amongst the green foliage of the trees. It is a most ferocious little villain, and if care is not taken it will enter the verandas and kill the pet birds there suspended in their cages. Two instances of the death of canaries in this way occurred during my stay in Capetown.

The Olivaceous Thrush (*Turdus olivaceus*), the 'Sprew' Starling (*Amydrus morio*), the so-called Cape 'Robin' (*Cosypha caffra*), and the Bakkakiri Bush-Shrike (*Laniarius bakkakiri*) are four other species that are occasionally seen in the gardens and the town and suburbs, but I should not call any one of them abundant. The Olivaceous Thrush picks about on the ground like our Song Thrush, and the Bush-Shrike has somewhat similar habits, but attracts attention by a variety of sweet whistling notes and is said to have imitative faculties.

A loquat-tree (*Photinia japonica*) with ripening fruit is the most likely place to see the Cape Bulbul (*Pycnonotus capensis*). The ridiculous claim of this bird to figure in the British List should be scouted by all sensible persons. It is a strictly local South African species and does not range far north.

The pretty Yellow Weaver-bird (*Sitagra capensis*) I was delighted to find busy in constructing its excessively neat hanging nests in many gardens of the city and suburbs. One small community had selected a willow-tree close to the Public Library, near the celebrated Oak-walk, for the purpose. I never failed to stop as I passed by every day to admire the sprightly and active way in which these little birds exercised their craft. In another spot the ill-advised builders had selected a bunch of papyrus-stalks in an ornamental pond for the seat of their ope-

rations. So soon as the nest was complete the weight of the structure broke the papyrus down, and caused the fall of stalk and nest into the water beneath. But the indefatigable birds would take no heed of this event, and commenced their fruitless work again on an adjoining stalk.

In a garden at Sea-point, the marine suburb of Capetown, I was much delighted, on an afternoon in September, to witness the proceedings of a small flock of Colies (believed to have been *Colinus capensis*). They were creeping about in a small tree-like shrub, and having searched it thoroughly through proceeded to another. Their curious mouse-like climbing antics and the positions assumed are known to us from captive specimens in the Regent's Park, but this was my only opportunity of witnessing their evolutions in a natural condition. As the eggs of this isolated form—one of the most distinctive Ethiopian types of bird life—are not well known, I beg leave to exhibit some specimens of them.

On the margin of the pond on Sea-point Common I also noticed specimens of a Pipit (*Anthus* sp. inc.) and a shall Shore-Plover (*Egialitis*), but could not be certain as to the species.

Two ascents of the well-known and most picturesque mountain which rises to a height of some 2500 feet above Capetown, introduced me to several birds which I had not seen below. The splendid *Protea*-shrubs just coming into flower were the resort of two forms of bird-life which were quite new to me *in natura*. These were the long-tailed *Promerops cafer*—another exclusively Ethiopian type—and the Sun-birds (*Anthobaphes* and *Cinnyris*). *Promerops* appears to have been modified specially to feed on the nectar of the species of *Protea* which are so abundant on the hills of Southern Africa, but no doubt, it also avails itself of the insects attached to the same flowers. On Table Mountain I also observed specimens of a very fine Rock-Thrush—*Monticola explorator*, I believe—and an occasional Crow (*Corvus scapularis*). Of the latter a single specimen appears to have taken up its abode in the garden of Groot Schuur, in the society of the Rooks which Mr. Rhodes has lately imported from Europe.

On the Cape Flats just outside Capetown the Secretary-bird (*Serpentarius secretarius*) still builds his nest every year, though I did not see it in this locality. A pair of young Secretary-birds now in the Museum Grounds at Capetown were obtained here in 1898, and two eggs were taken from the same nest on the 15th October this year. It is curious that our familiar Heron (*Ardea cinerea*) inhabits the 'vleys' in the same district, and that the Great Crested Grebe (*Podiceps cristatus*) is a regular breeder there.

Finally, I may mention that enormous flocks of the Dominican Gull (*Larus dominicanus*) and the Cape Cormorant (*Phalacrocorax capensis*) frequent the harbor of Table Bay, and are accompanied by small parties of the Cape Penguin (*Spheniscus demersus*). Outside the harbour the ships are likewise attended by numerous Giant Petrels (*Majaqueus aquinoctialis*) and occasional Albatrosses (*Diomedea melanophrys*).

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Comments.

BIRDS OF AFRICA.

The birds of Africa, and especially those of South Africa, are attracting much attention at present. In the last number of *The Ibis* (April, 1900), two of the six main articles, ten communications to the British Ornithologists' Club, and five reviews, besides three letters or notes, relate to African ornithology. The longest communication to the British Ornithologists' Club is by Dr. Philip Lutley Selater, who indulged in a trip recently to the Cape of Good Hope where his son is the director of the Museum of South Africa at Cape Town. Dr. Selater kept his eyes wide open when in the Cape peninsula and has recorded his observations in such a pleasant way, and gives such a good idea of the ordinary avian features of the country that we think we will merit the thanks of the readers of the OSPREY by reproducing his article in our columns. It will be found among the "original and selected articles."

In the instalment of the Birds of the Road in the current number of the OSPREY, Mr. Bartsch has given vent to his enthusiastic love of Nature and manifested the feeling stirred up in him by the music of the birds. The perusal of his words brought back to the senior editor the memory of a passage which thrilled him in early youth, and expressed his own sentiments. Forty to fifty years ago Hugh Miller was a very popular author and his works had a wide circulation. At the commencement of his career he was a journeyman mason and when he had become distinguished he published an autobiography under the caption "My Schools and Schoolmasters." He was a master of English, and some of his descriptions of scenery are very fine. While still an apprentice mason he worked in the valley of the Conon, about 20 miles from Cromarty (Scotland). Although the writer had not opened the book for many years, he took it down from the shelf and instantly turned to the place he wanted. The book is scarcely read now, but it may give as much pleasure in these days as when it was new. The editor would share his pleasure with the readers of the OSPREY and has the passage reprinted. In "Chapter X," Miller tells of delightful walks in the immediate neighborhood of Conon-side, and the chapter is headed by a quotation from Burns.

"The muse, nae poet ever fand her,
Till by himsel' he learned to wander
Adown some troatin' burn's meander,
An' no think lang;
O, sweet to music, and pensive ponder
A heart-felt sang!"

Later he gives the ideas we have admired. "There is a poetic age in the life of most individuals, as certain as in the history of most nations; and a very happy age it is. I had now fully entered on it; and enjoyed, in my lonely walks along the Conon, a happiness ample enough to compensate for many a long hour of toil, and many a privation. I have quoted, as a motto of this chapter, an exquisite verse from Burns. There is scarce another stanza in the wide round of British literature that so faithfully describes the mood which, regularly as the evening came, and after I had buried myself in the thick woods, or reached some bosky recess of the river bank, used to come stealing over me, and in which I have felt my heart and intellect as thoroughly in keeping with the scene and hour as the still woodland pool beside me, whose surface reflected in the calm every tree and rock that rose around it, and every hue of the heavens above. And

yet the mood, though a sweet, was also, as the poet expresses it, a pensive one: it was steeped in the happy melancholy sung so truthfully by an elder bard, who also must have entered deeply into the feeling.

"When I goe musing all alone,
Thinking of divers things foreknowne,—
When I builde castles in the air,
Voide of sorrow and voide of care,
Pleasing myself with phantasms sweet,—
Methinks the time runs very fleet;
All my joys to this are follie;—
None soe sweet as melanchollie.

When to myself I sit and smile,
With pleasing thoughts the time beguile,
By a brook side or wood soe green,
Unheard, unsought for, and unseene,
A thousand pleasures doe me blesse,
And crowne my soul with happiness;
All my joys to this are follie;—
None soe sweet as melanchollie."

"When I remember how my happiness was enhanced by every little bird that burst out into sudden song among the trees, and then as suddenly became silent, or by every bright-scaled fish that went darting through the topaz-colored depths of the water, or rose for the moment

over its calm surface,—how the blue sheets of hyacinths that carpeted the openings in the wood delighted me, and every golden-tinted cloud that gleamed over the setting sun, and threw its bright flash on the river, seemed to inform the heart of a heaven beyond,—I marvel, in looking over the scraps of verse produced at the time, to find how little of the sentiment in which I so luxuriated, or of the nature which I so enjoyed, found their way into them. But what Wordsworth well terms "the accomplishment of verse," given to but few, is as distinct from the poetic faculty vouchsafed to many, as the ability of relishing exquisite music is distinct from the power of producing it. Nay, there are cases in which the "faculty" may be very high, and yet the "accomplishment" comparatively low, or altogether wanting."

We wish for our readers during the coming season the same pleasures of communion with Nature as Miller knew and as happily we may know still.

Literature.

THE BIRDS OF SOUTH AFRICA. By Arthur C. Stark, M. B. Vol. i.—London: Porter, 1900. (The Fauna of South Africa. Edited by W. L. Selater.) 8vo. The first volume of the Fauna of South Africa, prepared by the late Dr. Stark, (whose death was recorded in the January number of the OSPREY) has been published and treats of the first half of the Passerine birds.

A KEY OF THE BIRDS OF AUSTRALIA AND TASMANIA, with their Geographical Distribution in Australia. By Robert Hall.—Melbourne and London, 1899. [8vo.]. The birds of the region indicated number 767 and are arranged according to the system adopted for the Catalogue of Birds in the collection of the British Museum. Aus-

tralia is divided, with Professor Spencer, into three main divisions or "sub-regions" named Eyrean, Torresian and Bassian.

NOTES ON THE BIRDS OBSERVED DURING THREE VISITS TO KAMCHATKA in 1896 and 1897 by Mr. G. E. H. Barrett-Hamilton, one of the British Seal Commissioners, have been published in the *Ibis*. He refers to Dr. Stejneger's "Results of Ornithological Explorations in the Commander Islands and Kamtschatka" (1885) as "the latest and most complete account of the birds of Kamchatka" that had been previously published. The Nutcracker of the region has been described as new—*Nucifraga kamchatkensis*.

Notes.

AN ORNITHOLOGICAL TRIP TO PORTO RICO has been made by Drs. Stejneger and Richmond. They left here early in February for Porto Rico, and returned to Washington about the first of May. Satisfactory collections were made in several parts of the Islands, and on the neighboring small island of Vieques. Owing to the dense population and lack of forest areas (and possibly to the hurricane) many of the native species of birds were found to be scarce. Eight specimens were obtained of *Nesospingus speculiferus*, a rare plain finch-like Tanager described by Lawrence in 1875, (*Ibis*, p. 383, pl. 9,) of which the National Museum had previously only one specimen (the type). The species seems to live in flocks on the mountains.

A TRIP TO CUBA was begun at nearly the same time as that of Drs. Stejneger and Richmond by

Messrs. Palmer and Riley. They went to the western part, and are still in the field. They have sent in good series of several rare birds.

EGGS OF THE CALIFORNIA CONDOR are wanted. Herbert M. Beesley of Bournemouth, England, a collector for Hon. Walter Rothschild, is trying to get for the museum at Tring an egg of the bird. There are said to be several oologists who are ready to pay \$1,000 to \$1,200 for an egg? The last recorded sale of an egg was in 1887.

A NEW EGG OF THE GREAT AUK has been found. Its discovery, according to a note in the *Ibis* for April (p. 369), "brought the number of known eggs of the Great Auk to 72." The history is to be given in a future number of the *Ibis*, and the egg itself was consigned to Henry Stevens for sale.

AN ATTEMPT TO RE-INTRODUCE THE GREAT BUSTARD INTO ENGLAND is to be made according to a writer in *The Field* (March 17). The place selected is that part of England's "eastern counties in which the last survivors of the indigenous race remained prior to complete extinction." The writer appreciates the difficulties in the way of carrying out such a project.

FEATHERS OF THE MOA have been received by the United States National Museum from Prof. F. W. Hutton of Christ Church, New Zealand. Fifteen were obtained, part of a considerable number discovered by Professor Hutton in a cave of the North Island at Earnescleugh. The birds, it will be remembered, have been long extinct.

A NEW BIRD OF PARADISE has just been found accidentally among the mounted representatives of that family in the United States National Museum. It belongs to the genus *Cicinnurus* and is related to the *C. regius*, but very distinct. Of course it comes from New Guinea, but its exact habitat is unknown. Details will be given in the next number of the OSPREY.

THE VOLBRECHT PRIZE FOR SCIENTIFIC RESEARCH (of the value of 12,000 marks or about 3,000 dollars) has been awarded by the University of Göttingen to Professor Gegenbauer. This illustrious zoologist, it will be remembered, has done much good work on the comparative anatomy of birds as well as of other animals.

THE PENGUIN IN CAPTIVITY. A leading article in *The Saturday Review* of London deals with "New Beasts at the Gardens" of the Zoological Society. These "new beasts" include "a pair of Grevy's Zebras," and "a pair of marvelous Babiroussa from the Celebes" besides two representatives of the remarkable and waning order of the lung fishes (Dipnoi) and "King Penguin from the Antarctic seas". The remarks on the latter are couched in such an interesting style that we feel sure the readers of the OSPREY will thank us for reproducing them. After specifying the "new beasts" the writer discusses thus pleasantly. "Of them all, perhaps (for on such a point certainty is not to be expected) the King Penguin is the most remarkable, both to the work-a-day eye of the ordinary visitor and the reflective one of the evolutionary naturalist. The former, till he discovers that it is a penguin, which quiets him and explains everything, is in a state of exclamatory wonder whilst, to the latter, *Aptenodytes longirostris*, as he fondly pronounces it to be (not forgetting to tell you that some authorities prefer calling this species *Aptenodytes pennanti*) presents the most strongly marked instance of special adaptation to changed habits, with consequent divergence from the typical avian form with which science is acquainted—if indeed, apteryx, casuarius, dinornis and one or two others do not offer equally forcible examples, as to which he will reserve his opinion. Two things strike one about equally in this delicious creature, its deliciousness, which is made up of its extraordinariness, and its beauty. Wonder, no doubt, precedes

admiration. The eye takes in the outline first and one really feels that one is Alice (or somebody else) in Wonderland, as a little, weird, grotesque white-waistcoated bolt-upright creature, only three feet high but full of deportment, comes up to one with something between a strut and a toddle and with a general suggestion of a "How do, how do? Excuse flippers. I haven't what you folks call a hand." That it should not have one seems remarkable, for an upright carriage and a broad frontage of waistcoat suggests hands and no flippers. Flippers, however, they are—at least—or do they only look like them? And just as a long, unmistakable break—assuring you that it cannot be the mock turtle—sets you wondering whether they are really wings, the keeper assures you of the fact and your eyes catches the plate, with name, on the railing—*Aptenodytes*, &c.—and you come out of "Wonderland" and remember that you are at the Gardens and have heard, or even read about penguins ever since you were little. And then comes admiration with a rush for, having assimilated his quaintness, you see that *Aptenodytes* is a handsome bird—no, personage—with a glorified head and the very sunrise on his breast, his waistcoat. The sunrise, yes, for just at the top of it, rising from the waistcoat as if from the sea but having three-quarters of its upper disc hidden by the dark feather-clouds of the throat, is the sun, a golden feathery sun and the gold of it is diffused downwards—glossed over the glossy, silver-creamy white—in gradually diminishing splendour till about half-way down, just where the middle button would be—it gleams and glimmers itself out. One almost seems to see rays. Anything fresher, purer, more pellucidly lovely it would be impossible to imagine. The breast of the King Penguin is bright, sunny morning. The head, however, including the face is jetty black but a little way back on each side of it the blackness is cut into as though with a knife—so sharp is the line of demarcation—by two patches of the same splendour—or even still more splendid—colour as that on the breast. These patches are comet-shaped, if a comet may have a very fat, almost circular head and a very thin, curved tail, which tails run down each side of the neck getting thinner and thinner till, in an almost imperceptible streak they join the opposite horns of the sun's crescent and enter into his glory. One would think this should be enough for any bird, but *Aptenodytes* has feathers on the throat just under the chin which, though they look black at first like the head, glint suddenly into a dark metallic green whenever the light catches them, whilst on each side of the long, thin, slightly curved beak, commencing at its base and running along the lower mandible to within a couple of inches of the tip, it displays two broad strips of naked red-orange skin, intensely brilliant and conspicuous. These are its special points. The rest are but adjuncts, as for instance the whole of the back which is of a blueish, slaty grey, looking much more like fur than feathers, and suggesting a newly bought and very expensive mantle of the most fashionable design. The sleeves which fit the queer little flipper-wings quite tightly are,

on the upper surface, of the same colour, but inside they are white, with greyish blends, the smooth, small close-pressed feathers having, all over them, the appearance of scales. These wonderfully modified wings are unbendable so that they cannot be folded up. They move only from the shoulder-joint and are quite devoid of quills. The wing, in fact, has become a paddle like that of the seal or porpoise; indeed, except as regards the head, this penguin much resembles a porpoise when in the water. The legs and feet—the former feathered almost to the ground—are very thick and massive, giving a firm basis of support for the long, upright body and adding much to the effect of the little pompous strut or stride which gives the bird its great charm of manner. You are struck by the fact that the web joining the toes is rather deeply notched enough, at least, to surprise in so aquatic a being—but, no doubt, the powerful, long, thin wings, cutting the water like the paddles of a Canadian canoe, only more effectively, do the principal work—at any rate when under the surface. On the land poor Aptenodytes must always, in spite of his sunny radiance, be just a little ridiculous, however charmingly so, but in the sea, amidst the rough surging billows of the Antarctic Ocean—"in cradle of the rude imperious surge"—he must impress the imagination in a very different manner—more as the dark cormorant or the stormy petrel does. Unfortunately a sort of enlarged concrete wash-basin is a poor substitute for the Antarctic Ocean and so the poor, lonely bird, taken from his kith and kin and debarred from the enjoyment of all his natural activities, seems to think. It is melancholy to see this most aquatic of all birds in such accommodation as English hospitality has supplied him with. Still he is lucky in his degree. After all he is not living in a rabbit-hutch or a parrot-cage—at the Aquarium (!) hard by. We should have liked to say something—to prattle a little—of the ways and habits of these dear birds, how they breed (or bred); it is safest, also, to use the past tense) on the Falkland Islands, choosing always the north or east side of them and commencing to lay just on 7 October, how some of the sites chosen were several miles from the sea, and how the penguins marched from it in detachments of from ten to twenty looking like regiments of soldiers and making regular roads through the grass, how they all set close together—some hundreds of thousands—and hatched their eggs and reared their young in peace and amity had, how, till man, settling, in an evil hour, on the islands, commenced to rob and murder them, they were as happy as they are charming and innocent. But *Ceratodus* is waiting and, moreover, these things are known—the last but too well, concerning which one need read but Professor Newton ("A Dictionary of Birds," pages 705-6). So we will leave Apt-

nodytes, only just adding that he is fed on herrings and never suggests being a bird except, by association, when he preens his feathers".

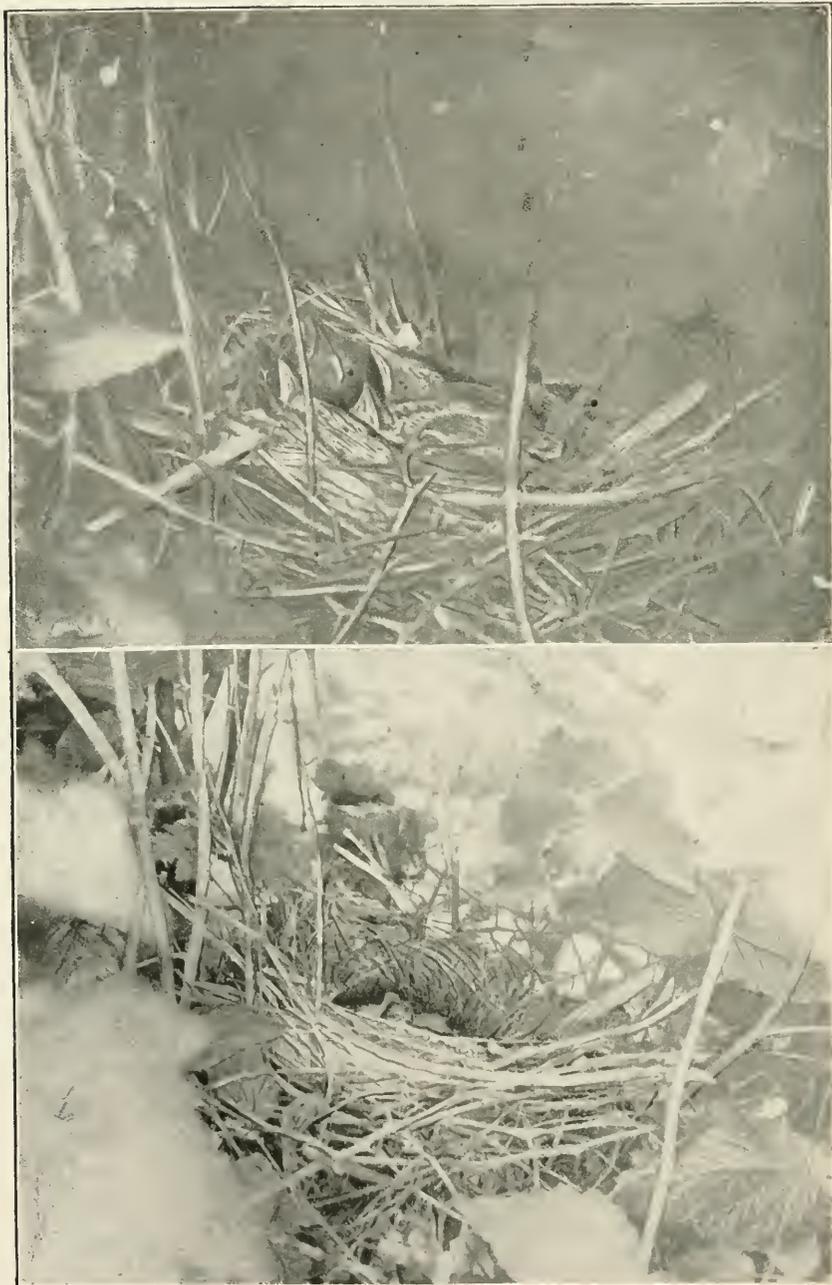
THE DEATH OF PROF. ALPHONSE MILNE-EDWARDS removes from the scientific field one who opened a new epoch in ornithology. The son of a still more distinguished father (Henri Milne Edwards) he was born in 1835 at Paris, obtained the degree of M. D. in 1859, and became a Professor in the school of Pharmacy at Paris in 1865. In 1876 he entered the Jardin des Plantes as aid to his father and in 1871 became the administrative director of the Menagerie and Museum of Natural History. His greatest work was published in 1872 and was entitled "Recherches Anatomiques et Paléontologiques pour servir à l'Histoire des Oiseaux Fossiles de la France;" it was in four large quarto volumes, two of text and two of plates. In this work he endeavored to identify the fossil bones of birds which had been collected and preserved in different museums for years. In order to do this, he was naturally obliged to study in detail the osteology of the principal types of living birds in order to have a basis for comparison for the fossils, and this led him to interesting results. He found that the long bones (legs and wings), which are the ones best preserved in a fossil state, had good distinctive characters and he was thus able to approximate those he secured, and which had been neglected before, to their proper places in the ornithological system.

He died on the 21st of April.

His family name is an interesting example of the development of a patronymic. His father was a younger son of the large family of an Englishman resident in Belgium, about the commencement of the century, and his name was Edwards. Milne was his middle name. His numerous communications to the French Academy of Science were indexed under the name Edwards; but after his death the son's communications were always referred to in the index from the name Milne-Edwards.

THE DEATH OF THE DUKE OF ARGYLE notably lessens the number of Englishmen of high station addicted to scientific pursuits. The duke's family name was George Douglass Campbell. He was born in 1823, and succeeded to the title in 1847. He was quite a voluminous author, and his "Reign of Law" (1866 etc.) especially attracted considerable attention when first published. He also wrote a number of articles on geological matters, and especially against Darwin's view of the formation of Coral Islands. Incidentally, in various works and magazine articles, he noted birds, chiefly giving observations on their habits.

He died on the 24th of April.



THE CATBIRDS' HOME.
Upper: Young ten days old.
Lower: Young twelve hours old.

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BIRDS OF THE ROAD.—VI. NESTING TIME.

By PAUL BARTSCH, Washington, D. C.

What a busy time this month of May has been amongst the birds.—a time of bustling activity,—of restless energy, when all, obedient to a common law moved northward, homeward to the place where they had fixed their nest a year ago; or where they had awakened to the pleasures of life and beheld for the first time the glorious light of day. Onward, homeward, northward was the password, and onward they did move. Day after day we noted new arrivals, and day after day we found that some who had voiced their presence the day before had taken their notes with them, and their sweet songs will linger in memory only, until another year when again they will with renewed vigor pursue a parallel course; for in fall they are mute or almost so, and many of the brilliant singers which made the woods resound with songs of love, return quietly and silently to their southern winter home.

Night after night we heard train after train of these little songers pass rapidly over the city bound for the north, announcing their passage only by an occasional note, perhaps the order of the leader and many a moonlight night we saw flocks of them, as they passed fair Luna's shining face.

Often on these moonlight nights we heard some bird, perchance a dreamer, recite his little lay in sweetly quiet tones, and often too, at this season, Catbirds, Brown Thrashers and the Chat in particular forgot the hour of day and sang as merrily as when Old Sol held sway. I love these bursts of melody—when all is quiet, and even the leaves seemed hushed. A serenade at love's own door, full of promise and of hope.

In the mean time one by one of our familiar birds of summer have returned, and many of them indeed have long since been busily intent upon a home construction.

The Phoebe has placed its cosy, lichen-stuccoed nest against a sheltering cliff, secure from harm. What a master-piece of architecture is this home of mud and straw, and softest downy moss, fitted so snugly against yonder rock upon that tiny shelf. Concealed most

deftly by its garriture of mossy green and lichen gray. We climbed up to it, and within its soft deep cup, lay four, pure white eggs save for a few faint dots of richest brown, which vainly would have encircled the larger end. We gazed upon these treasures and wished the birds which moved about rather uneasily success at house-keeping. Leaving them to their duties it seemed as if we heard Lowell say:—

"Its a wee sad colored thing
As shy and secret as a maid,
That, ere inchoir the robin sings
Pipes its own notes like one afar
It seems fain prompted to report,
The story of some ancient ill
But Phoebe! Phoebe! sadly sweet,
Is all it says, and then is still."

We returned to this nest on the 27th, and found all but one of the young gone, and this too, joined its nest-mates after posing for the picture which we are pleased to reproduce.

The end of May finds most of our birds intent upon domestic duties, many in fact are already leading their birdlings about, teaching them the A. B. C. of every day existence.

Since it pleased the senior editor of the OSPREY to publish a photograph of my present quarters and its surroundings I shall devote a chapter to the birds of the place. "The Home of the Birds," is a well chosen title for the picture, for I believe that there are few places of such circumscribed area which can boast of a greater avian population.

Mr. Flicker was the first one to set to house-keeping; at least, he chose the dead limb which projects from one side of the elm standing immediately outside of our fence, fully two months ago. I have not seen his young, and am somewhat surprised at this. The Robin, though less prompt, has led his little ones from their mud-walled home to the spring where cooling waters flow, and the Catbirds have built and rebuilt, two of the three pairs being so unfortunate as to have their household rifled by some thoughtless boys, who also overturned a nest of the Yellow Warbler, and emptied it of



The Phoebe's Nest and Young.

its four newly hatched infants. The same lot befell the single pair of Thrashers, and a pair of Wood Thrushes whose nests were in all too exposed a situation. All of these, however, have rebuilt, and are doing well at present.

The saddest fate of all befell the tiny pretty Hummers which had placed their dainty little home away out upon a slender branch of one of our apple trees. I discovered it on the morning of the 26th, when the female suddenly came down, and buzzingly inquired what I wanted near her nest. Her actions were so unmistakable that I decided to learn a little more about the whereabouts of her home. Remaining perfectly quiet for a few moments I had the pleasure to see her dart upward, and after a somewhat tortuous course through the leafy top of the trees, (which course, by the way, she always employed when approaching the nest) quietly settle down upon the little cup. I had often watched this busy little body as she gathered cotton from the cotton wood, and even once espied her picking a bit of gray lichen from an apple tree, in the opposite end of the orchard, but had failed to trace the little burdened gem to her nest. It was with great pleasure therefore that I made this discovery for I hoped to become thoroughly acquainted with Trochilian household affairs and domestic duties.

I built a 20 foot scaffold on the 27th, and had the pleasure to take a peep at the two little oval, white, treasures, and even took a picture of the whole. Not knowing when they were deposited and not wishing to miss anything which might

take place within that little, softest of all soft cups, I took a look at it each day until June 4, when I found the remains of the two strongly incubated eggs on my platform and thus my pleasant dream came to an untimely end. I strongly suspected a Catbird of doing this mischief, but the finding of several rocks on the platform a day or two later has led me to once more believe that the small boy is again responsible for the outrage. During all my visits to the nest I never once saw the male. It was the female which guarded the house at all times. The little nest, now before me, is a marvel. It is affixed to a triple forking branch which is about three-eighths of an inch in thickness, and is joined to it and the three lesser divisions. Its largest outside diameter is one and five-eighths, its smallest, one and one half inches. Its outside depth is one and five-sixteenths of an inch. Its inside diameters are seven-eighths by thirteen-sixteenths of an inch. The bulk of the nest is composed of the downy fruit of the cotton wood which seems to have been securely woven and here and there fixed by silky threads from the spider's web. The entire exterior being beautifully adorned with small bits of gray and green lichens, species common to the apple tree, which add very effectively to the concealment of the nest as well as to its beauty.

One pair of Catbirds built their nest in a bunch of raspberry bushes, which was indeed well concealed, and would have escaped detection had it not been for the fact that we knew; that Kitty loves just such places, in which to

cradle her young. Almost the first separating of the bushes caused her to skip with great expediency and noise.

She and her faithful mate heaped volumes of angry abuse upon our heads, and called in all their feathered neighbors to help denounce the bold intruders.

This was in the evening of the 25th of May; the sun being unfavorable, we decided to wait until tomorrow to try a snap at the nest.

Great was our surprise, the next morning, to find instead of the four shining, deep-greenish blue eggs three and a half dusky little birdlings, exceedingly homely, with all too weak a neck to support the large ungainly head. We hastily exposed two plates, and secured two rather fair negatives, one of which is here reproduced.

The days which followed added rapidly to the size of the four hungry little fellows, and, thank fortune, early cherries were ripe at the time and plentiful, and what was still better, very near at hand, as were the strawberries, which two, I firmly believe, furnished nine-tenths of the food offered the young.

Their increase was something wonderful, as the series of pictures, taken on successive days will testify. Owing to lack of space we can only publish one other, the last one taken in the briers, on June 4th, which is quite a contrast to the first, the cup being full to overflowing. On the following day, June 5th, I found them scattered in all directions, and I captured one of the little fellows, who was about to make a call on the inmates of the house, and had been fortunate enough not to be welcomed by the cat. I forced him to have his picture taken in divers poses. After which I replaced him in the nest, but he had evidently bid this farewell forever, for he at once set out on new explorations. I am rather uncertain about the farther history of the four inmates of that

nest, and feel inclined to believe that they ceased existence a day or two after, for, though I looked for them very carefully everywhere, I failed

to detect any sign of them whatever. The old birds being present all the while. The extremely rapid development of these birds was quite a surprise to me as only ten days elapsed between time of hatching and leaving of the nest.

The Chipping Sparrows were more fortunate, they raised their little flock of four unmolested in their hairy abode among the closely compacted branches and densely leafy retreat of a small cedar, which seemed to extend its pointed needles against every foe of the favored birds, and now the pair lead them about the yard. Queer little bob-tailed fellows they were at first, entirely different from the parents with their streaky breasts and downy heads, for the fuzzy juvenile garb still clung to the tips of their feathers when they left their sheltered home. At present they are being taught to seek their own food on the hillside amongst the sparse vegetation.

The Yellow Warblers did not grieve long over the irreparable loss which they had sustained, but apparently took matters philosophically, and, being true believers in the old adage, "If at first you don't succeed, try, try again," they did try again. No one knows where they had saddled their firm soft nest, but now, they too are leading their four pale yellow offsprings from tree to tree about the premises. I have learned to love the little Yellow Warbler more than ever. He is so earnest, yet joyful, and extremely anxious about the little ones in his care, which are ever hungry, and which he is supplying with food, but with all his haste he finds time to bestow a little pleasantness upon his equally busy spouse. I wish that all men might study him. I am sure that if they all did and followed



Effects of a cherry upon a ten day old Catbird.

his example there would be much more happiness within many a home.

Another pair of our birds has led its young ones out into the world—the Song Sparrows. They are very secretive, and it is only when we are real quiet, and have stretched out in the grass on the hillside, that we may see them lead their family out from the briers along the sandy course of the little rivulet in quest of food and pleasure. The male even now, is full of spirit, be the day rain or shine he devotes a portion of it to his song. There are a number of other birds which we know are nesting within our bounds, but whose homes we have not viewed as yet, among these are the Chimney Swift which was busily engaged breaking off dead twigs from the cherry trees some two weeks ago, and of whose chattering young we hope to hear in the chimney before long. The Yellow-throated and Red-eyed Vireo both are present, but so far both have failed to betray the whereabouts of their nest, so have the Orchard Oriole and the Woodpewee. The latter, we have watched for hours at a time, but all in vain. Yet there will come a time when the hungry young will require his closest attention, and with it the hour when he will unawares disclose the secret location of his neat lichen covered nest.

His cousins the Kingbird and the Great Crested Flycatcher are both frequently present,

and the former keeps close guard, driving away any Black Crow which may chance to fly over the place too low to suit his fancy. However, I believe that the home of both of these birds is with some of our neighbors.

I would once again plead with our readers to protect our birds, and to aid them in these trying times by removing prowling cats and other vermin which act most destructively among young birds. But most of all, I would warn them against the boys. Here is your chance to do true missionary work, and that at home. Acquaint the children with our birds, point out to the would be bird nest robber, the bird's love for his home, and the many dangers which beset these little winged brethren in the form of natural foes, and surely you will be pleased, for you will reap a double reward.

Place shallow pans of water for them beneath some shady shrub or tree, where a natural supply in the immediate neighborhood is wanting, and you will be delighted to see ever so many species come to partake of the cooling draught or even stop to take a bath. It is ever delightful to watch them in this operation, to see them nimbly step into the pan and send the contents flying in fine spray in all directions, then watch them preen and primp, you will almost wish you were a bird that you might join them in their happy life.

BIRD NOTES.*

BY LADY BROOME.†

A great reaction of feeling in favour of the Mongoose has set in since Mr. Rudyard Kipling's delightful story of 'Rikki-tikki,' in the 'First Jungle Book,' presenting that small rodent in a heroic and loveable aspect. But to the true bird-lover the Mongoose still appears a dangerous foe. It is well known that its introduction into Jamaica has resulted in nearly the extermination of bird life in that island, and the consequent increase of insects, notably the diminutive tick, that mere speck of a vicious little torment.

There are, I believe, only a very few Mongooses in Barbados, and strong measures will doubtless be adopted to still further reduce their number; for no possible advantage in destroying the large brown rat which gnaws the sugarcane can make up for the havoc the Mongoose creates in the poultry yard, and indeed, among all feathered creatures. It has also been found by experience that the Mongoose prefers eggs to rats, and will neglect his proper prey for any sort or size of egg. He was brought into Jamaica to eat up the large rat introduced a century ago by a certain Sir Charles Price

(after whom those same brown rats are still called), instead of which the Mongoose has taken to egg and bird eating, and has thriven on this diet beyond all calculation. Sir Charles Prince introduced his rat to eat up the snakes with which Jamiaca was then infested, and now that the Mongoose has failed to clear out the rats, some other creature will have to be introduced to cope with the swarming and ravenous Mongoose.

It was therefore with the greatest satisfaction I once beheld in the garden at Government House, Barbados, the clever manner the birds circumvented the wiles of a half-tame Mongoose which haunted the grounds.

Short as is the twilight in those Lesser Antilles, there was still, at midsummer, light enough left in the western sky to make it delightful to linger in the garden after our evening drive. The wonder and beauty of the hue of the sunset sky seemed ever fresh, and every evening one gazed with admiration, which was almost awe, at the marvellous undreamed of colours glowing on that gorgeous palette. Crimson, yellows, mauves, palest blues, chry-

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soprase greens, pearly greys, all blent together as if by enchantment, but changing as you looked and melting into that deep, indescribable, tropic purple, which forms the glorious background of the 'meaner beauties of the night.'

In this same garden there chanced to be a couple of low swinging seats just opposite a large tree, which I soon observed was the favourite roosting place of countless numbers of birds. Indeed, all the fowls of the air seemed to assemble in its branches, and I was filled with curiosity to know why the other trees were deserted. At roosting time the chattering and chirruping were deafening, and quarrels raged fiercely all along the branches. I noticed that the center of the tree was left empty, and that the birds edged and sidled out as far as ever they could get on to its slenderest branches. All the squabbles arose from the ardent desire with which each bird was apparently filled to be the very last on the branch and so the nearest to its extreme tip. It can easily be understood that such thin twigs could not stand the weight of these crowding little creatures, and would therefore bend until they could no longer cling to it, and so had to fly off and return to search for another foothold. I had watched this unusual mode of roosting for several evenings, without getting any nearer to the truth than a guess that the struggle was perhaps to secure a cool and airy bed-place.

One hot evening, however, we lingered longer in what the negro gardener called the 'swingers,' tempted by the cool darkness, and putting off as long as possible the time of lights and added heat, and swarming winged ants, and moths, and mosquitoes. We had begun to think how delightful it would be to have no dinner at all, but just to stay there, gently swaying to and fro all night, when we saw a shadow—for at first it seemed nothing more—dart from among the shadows around us, and more swiftly up the trunk of the tree. At first I thought it must be a huge rat, but my dear companion whispered, 'Look at the Mongoose!' So we sat still, watching it with closest attention. Soon it was lost in the dense central foliage, and we wondered at the profound stillness of that swarming mass of birds, who had not long settled into quiet. Our poor human, inadequate eyes had, however, become so accustomed to the gloom by its gradual growth, that we could plainly observe a flattened-out object stealthily creeping along an out-lying bough. It was quite a breathless moment, for no shadow could have moved more noiselessly than that crawling creature. Even as we watched, the bough softly and gradually bent beneath the added weight, but still the Mongoose stole onwards. No little sleeping ball of feathers was quite within reach, so yet another step must needs be taken along the slender branch. To my joy that step was fatal to the hopes of the brigand beast, for the bough dipped suddenly, and the Mongoose had to cling to it for dear life, whilst every bird flew off with sharp cries of alarm which effectually roused the whole population of the aerial city, and the air was quite darkened round the tree by fluttering, half-awakened birds.

It was plain now to see the reason of the proceedings which had so puzzled me, and once more I felt inclined to—as the Psalmist phrases it—'lay my hand on my mouth and be still,' in wonder and admiration of the adaptable instincts of birds. How long had it taken these little helpless creatures to discover that their only safety lay in just such tactics, and what sense guided them in choosing exactly the one tree which possessed slender and yielding branch-tips which were yet strong enough to support their weight? They were just settling down again when horrid clamorous bells insisted on our going back into the hot, lighted-up house, and facing the additional miseries of dressing and dinner. Though we carefully watched that same tree and its roosting crowds for many weeks, we never again saw the Mongoose attempt to get his supper there, so I suppose he must also be credited with sufficient cleverness to know when he was beaten.

A Toucan does not often figure in a list of tame birds, and I cannot conscientiously recommend it as a pet. Mine came from Venezuela and was given to me soon after our arrival in Trinidad. It must have been caught very young, for it was very tame, and if you did not object to its sharp claws, would sit contentedly on your hand. The body was about as big as that of a crow, but may be described as a short, stout bird, with a beak as large as its body. Into this proboscis was crowded all the colours of the rainbow, blended in a prismatic scale. Its plumage would be dingy if it were not so glossy, and was of a blue-black hue with white feathers in the wings and just a little orange under the throat to shade off the bill, as it were. Some Toucans have large fleshy excrescences at the root of the bill, but this one and those I saw in Trinidad had not.

The Toucan was, however, an amiable and, at first, a silent bird. He lived in a very large cage, chiefly on fruit, and tubbed constantly. But the curious and amusing thing was to see him preparing to roost, and he began quite early, whilst other birds were still wide awake. The first thing was to carefully cock up—for it was a slow and cautious proceeding—his absurd little scut of a tail which was only about three or four inches long. This must in some way have affected his balance, for he never moved on the perch after the tail had been laid carefully back. Then, later in the evening, he gently turned the huge unwieldy bill round by degrees, until it too was laid along his back and buried in feathers in the usual bird fashion. By the way, I have always wondered how and why the myth arose that birds sleep with their heads *under* their wings? A moment's thought or observation would show that it is quite as impossible a feat for a bird as for a human being. However, the Toucan's sleeping arrangements resulted in producing an oval mass of feathers supported on one leg, looking as unlike a bird as it is possible to imagine. When he was ruthlessly awakened by a sudden poke or noise, which I grieve to state was often done—in my absence, needless to say—I heard that he invariably tumbled down in a sprawling heap, being

unable to adjust the balance required by that ponderous bill all in a moment.

For many months after his arrival the Toucan was at least an unobjectionable pet and very affectionate. He used to gently take my fingers in his large gaudy bill and nibble them softly without hurting me, but I never could help thinking what a pinch he might give it if he liked. His inoffensive ways, however, only lasted while he was very young, for in due course of time he began to utter discordant yells and shrieks, especially during the luncheon hour. This could not be borne, and the house-steward—a most dignified functionary—used to advance towards the cage in a stately manner with a tumbler of water concealed behind his back which he would suddenly fling over the screaming bird. The Toucan soon learned what Mr. V's appearance before his cage meant, and even ceased his screaming at the mere sight of an empty tumbler. These sudden douches, or else his adolescence, must have had a bad effect on his temper, for he could no longer be petted and played with, and any finger put within reach of his bill suffered severely. Then he got ill, poor bird, and the Portuguese cook was called in to doctor him. But the remedies seemed so heroic that I determined to send the Toucan away. I could not turn him loose in the garden on account of his piercing screams, so he was caught when asleep, packed in a basket, and conveyed to the nearest high woods, where he was set at liberty, and I can only hope he lived happy ever after, as a less gaudy and beauteous variety of Toucan is to be found in those virgin forests.

As might naturally be expected, there are many beautiful birds in the large botanical gardens of Trinidad in the midst of which Government House stands. It used to be a great delight to me to watch the darting Orioles flash past in all their golden beauty, and some lovely, brilliantly blue, birds were also occasionally to be seen among the trees. I was given some of these, but alas! they never lived in captivity, and after one or two unsuccessful efforts I always let them out of the cage. The ubiquitous Sparrow was there of course, and so was a rather larger black and yellow bird called the 'Qu'est-ce que dit?' from its incessant cry.

In these gardens the Orioles built their large clumsy nest of dried grass without any precaution against surprises; but I was told that in the interior of the island, where snakes abound, the 'Corn-bird'—as he is called up-country—has found it expedient to hang his nest at the end of a sort of grass rope some six feet long. This forms a complete protection against snakes as the rope is so slightly put together that no wise serpent would trust himself on it. Sometimes the Oriole finds he has woven too long a nest, so he half fills it with leaves, but after heavy rains these make the structure so heavy that it often falls to the ground, and from this cause I became possessed of one or two of these nests with the six or eight feet of dangling rope. Anything so quaint as these numerous nests swinging from the topmost branches of lofty trees cannot well be imagined. It is impossible to reach them by climbing or in any other way

except shooting away the slender straw rope, which rifle-feat might surely rank with winning the Queen's Prize at Bisley!

It has also interested me to examine birds' nests in the different colonies to which the wandering star of my fate has led me, and I have observed a curious similarity between the houses made with and without hands. For instance, take a bird's nest in England, where human habitations are solid and carefully finished, and you will see an equal finish and solidity in the neatly constructed nest with its warm lining and lichen-decorated exterior. Then look at a bird's nest in a colony with its hastily constructed houses made of any slight and portable material. You will find the majority of birds' nests equally makeshift in character and style, just loosely put together anyhow with dried grass, and evidently only meant for ordinary use. I saw one such nest of which the back must have tumbled out, for a fresh leaf had been neatly sewn over the large hole with fibre. In strong contrast, however, to such hastily constructed bird-dwellings was a nest of the 'Schneevögel' which came to me from the foot of the Drakenburg Mountains in Natal. Beautifully made of sheep's wool, it had all the consistency of fine felt. It was a small hanging nest, but what I delighted in was the little outside pocket in which the father of the family must have been wont to sit. The mouth of that nest was so exceedingly small that at first I thought that no bird bigger than a bee could have possibly fitted into it, but I found that it expanded quite easily, so elastic was the material. One could quite picture the domestic comfort, especially in so cold and inhospitable region, of that tiny *menage*.

I always longed to make a journey to the northwest of Western Australia expressly to see the so-called 'Bower-bird' at play. This would have necessitated very early rising on my part, however, for only at dawn does this bird—not the true Bower-bird, by any means—come out of his nest proper, and lie on his back near the heap of snail shells, &c., which he has collected in front of his hastily thrown-up wind-shelter, to play with his toys. It is marvellous the distance those birds will carry anything of a bright colour to add to their heap, and active quarrels over a brilliant leaf or berry have been observed. A shred of red flannel from some explorer's shirt or blanket is a priceless treasure to the Bower-bird and eagerly annexed. But the wind-shelter of coarse grass always seemed to me quite as curious as the heap of playthings. The photographs show me these shelters as being somewhat pointed in shape, very large in proportion to the bird, and with an opening something like the side door in a little old-fashioned English country church. This habit of hastily throwing up wind-shelters is not confined to this bird only. I was given some smaller birds from the interior of Western Australia, and at the season of the strong northwest gales—such a horrible, hot wind as that was—I found my little birds loved to have a lot of hay thrown into their big cage with which in a single morning they would build a large construction resembling a huge nest, out of all proportion to

their size. At first I thought it was an effort at nest-building, but as they constantly pulled it to pieces, and never used it except in high winds, it was plain to see that their object was only to obtain a temporary shelter.

Next to the brilliant Gouldian Finches, which, by the way, were called Painted Finches' locally, I loved the small blue-eyed Doves from the northwest of Australia better than any other of my feathered pets. These little darlings lived by themselves, and from the original pair given to me I reared a large and numerous family. They were gentle and sweet as doves should be, of a lovely pearl-gray plumage, with not only blue eyes, but large turquoise-blue wattles round them, so that the effect they made was indeed blue-eyed. They met with a tragic fate, for I turned some eight or ten pair loose in the garden grounds of the Perth Government House. Alas! within a week of their being set at liberty not one was left. They were much too confidently tame to fend for themselves in this cold and cruel world. Half-wild cats ate some, hawks pounced on others, but the saddest of all the sudden deaths arose for their love of me. Whenever I was to be seen, even inside of the house, a dove would fly to me and dash itself against the plate-glass windows, falling dead in the verandah. They did not seem able to judge distance at all, and it was grievous to know they met their death through their devotion to their mistress and friend.

A dozen miles to windward, opposite the flourishing port of Fremantle, Western Australia, lies a little island with a lighthouse on it, known on charts and maps as Rottnest. It was astonishing what a difference in temperature those few miles out to sea make, and on this tiny islet was our delightful summer home, for one of the earliest governors had built, years before, a little stone house on a charming site looking across the bay.

I was comparatively pettish over there, for I could not well drag large cages of birds about after me, when it was difficult enough to convey chickens and ducks across the somewhat stormy channel, so I hailed with delight the offer, made by a little island boy, of a half-fledged Hawk, as tame as it is in a Hawk's nature to be. There was no question of a cage, and I am sure 'Alonzo' would not have submitted to such an indignity for a moment, so he was established on a perch in a sheltered corner of the upstairs verandah outside my bedroom door. I fed him at short intervals—for he was very voracious—with raw meat, and he took rapid gulps from a saucer of water; but he sat motionless on his perch all day, only coming on my hand for his meals. This went on for two or three weeks, when one morning at earliest daylight I heard an unusual noise in the verandah, and just got out in time to see my little Hawk spreading his wings and sailing off into space. He had, however, been wise enough to devour all the meat left in readiness for his breakfast. Of course I gave him up for lost and went back to bed thinking sadly of the ingratitude and heartlessness of Hawk nature. I certainly never expected to see my bird again, but a few hours later, as I was standing in the verandah, I stretched out my hand as far

as I could reach, when lo! the little Hawk dropped like a stone from the cloudless blue and sat on my arm as composedly as if he had never left the shelter of his home. It is needless to say that the return of the prodigal called forth the same rapturous greeting and good dinner as of yore. After that it became an established custom that I should every evening put a saucer of chopped-up raw meat on a table in the verandah just outside my window, and a pannikin of water to serve for the Hawk's early breakfast, but he foraged for himself all day, coming back at dusk to roost in the verandah. It was curious to watch his return, for he generally made many attempts before he could hit off the exact slope of the roof so as to get beneath it. After each failure he would soar away out of sight, but only to return and circle round the house until he had determined how low to stoop, and then like a flash he darted beneath the projecting eaves. Apparently it was necessary to make but the one effort, for there was no popping in and out or uncertainty, just one majestic swoop, and he would be on his perch, as rigid and unruffled as though he had never left it.

When our delicious summer holiday was over, and the day of return to the mainland fixed, it became an anxious question what to do with the Hawk. To take him with us was of course out of the question, but to leave him behind was heartrending. Not only should I miss the accustomed clatter of saucer and pannikin at earliest streak of dawn, but not once did I ever hold my hand out during the day that he did not drop on it at once. He never could have been far off, although no eye could follow him into the deep blue dome where he seemed to live, poised in the dazzling sunshine air. But Alonzo settled the question for himself a couple of days before we left, by suddenly deserting his old home and leaving his breakfast untouched. We watched in vain for his return on two successive evenings, nor did he drop on my hand for the last two days of our stay. I then remembered that on the last evening he had come home to roost I had noticed another Hawk with him, and rather wondered if he intended to set up an establishment in the verandah. But I suppose the bird-elect found fault with the situation, and probably said that, though well enough for a bachelor, it was not suitable for the upbringing of a family and so the new home had to be started in a more secluded spot, and the sheltering roof knew its wild guest no more.

I am afflicted with a Cockatoo! I can't 'curse him and turn him out', for in the first place I love him dearly, and in the next he is a sort of orphan grandchild towards whom I have serious duties and responsibilities. And then he arrived at such a moment, when every heart was softened by the thought of the Soudan Campaign with its frightful risks and dangers. How could one turn away a suppliant Cockatoo who suddenly and unexpectedly presented himself on the eve of the Battle of Omdurman, with a ticket to say his owner had gone up to the front and he was left homeless in Cairo? It would have been positively brutal, and then he was the friendliest of birds! No shyness or false pride about *him*. He had already invited my pretty little

cook to 'kiss him and love him,' and was paying the housemaid extravagant compliments when I appeared on the scene. To say he flew into his grandmother's arms, is but feebly to express the dutiful warmth of his greeting. In less than ten minutes that artful bird had taken complete possession of the small household, and assumed his place as its head and master. Ever since that moment he has reigned supreme, and I foresee that he will always so reign.

But he is certainly the most mischievous and destructive of his mischievous species. Nothing is safe from his sudden and unexpected fits of energy. I first put him in a little conservatory where he had light and air, and the cheerful society of other birds. This plan, however, only worked for two or three days. One Sunday morning I was awakened by ear-piercing shrieks and yells from Master Cockie, only slightly softened by distance. These went on for some time until I perceived a gradual increase of their jubilant note, which I felt sure betokened mischief, so I hastily got myself into a dressing-gown and slippers and started off to investigate what trouble was 'toward.' It was so early that the glass doors were still shut, and I was able to contemplate Master Cockie's manoeuvres unseen. The floor of the little greenhouse was strewn with fern-leaves, for gardening, or rather pruning, had evidently been his first idea. The door of his travelling cage—which I had left overnight securely fastened—lay flat on the pavement, and Cockie with extended wings was solemnly executing a sort of *pas scul* in front of another cage divided by partitions, in which dwelt a Goldfinch and a Bullfinch side by side. Both doors were wide open and the Bullfinch's compartment was empty, but the Goldfinch was crouched, paralysed with terror, on the floor of his abode. He evidently wanted to get out very badly, but did not dare to pass the yelling door-keeper, who apparently was inviting the trembling little bird to come forth. The instant the artful villain perceived me, he affected perfect innocence and harmlessness, returning instantly to his cage, and commenced his best performance of a flock of sheep passing, doubtless in order to distract my attention. How could one scold with deserved severity a mimic who took off not only the barking dogs and

bleating sheep, but the very shuffle of their feet, and the despairing cry of a lot of lambs. And he pretended great joy when the Bullfinch—more dead than alive—at last emerged from the shelter of the thick creeper where he had found sanctuary, asking repeatedly after his health in persuasive tones.

I gave up the cage after that and established him on a smart stand in the dining-room window; for I found that the birds in the conservatory literally could not bear the sight of him. A light chain securely fastened on his leg promised safety, but he contrived to get within reach of my new curtains and rapidly devoured some half-yard or so of a hand-painted border which was the pride of my heart. Then came an interval of calm and exemplary behaviour which lulled me into a false security. Cockie seemed to have but one object in life, which was to pull out all his own feathers, and by evening the dining-room often looked as though a white fowl had been plucked in it. I consulted a bird doctor, but as Cockie's health was perfectly good, and his diet all that could be recommended, it was supposed he only plucked himself for want of occupation, and firewood was recommended as a substitute. This answered very well, and he spent his leisure in gnawing sticks of deal—only when no one chanced to be in the room he used to unfasten the swivel of his chain, leave it dangling on the stand, and descend in search of his playthings. When the fire had not been lightened I often found half the coals pulled out of the grate, and the firewood in splinters. At last, with warmer weather, both coals and wood were removed, so the next time Master Cockie found himself short of a job he set to work on the dining-room chairs, first pulled out all their bright nails, and next tore holes in the leather, through which he triumphantly dragged the stuffing!

At one time he went on a visit for some weeks and ate up everything within his reach in that friendly establishment. His 'bag' for one afternoon consisted of a venerable fern and a large palm, some library books, newspapers, a pack of cards, and an armchair. And yet everyone adores him, and he is the spoiled child of more than one family.

WILLIAM SWAINSON AND HIS TIMES.—IV.

By THEODORE GILL, Washington, D. C.

(Continued from page 138.)

MARRIAGE AND PROFESSIONAL AUTHORSHIP.

Swainson had been paying attention for several years to a young lady, "the only daughter of John Parks, Esq., of Warwick," a "borough" or town near the center of England, but, as he was largely dependent on his father, hesitated to marry till he should secure the means of support for himself, and his prospective family. "A vacancy in the British Museum, about this time, caused by the deplorable illness" of his friend, Dr. Leach, occurred, and

Swainson applied for the position. He "produced the highest testimonials from such men as Cuvier, Roscoe, Dr. Rees, Sir James Smith, Dr. Trail, Sir W. J. Hooker, Dr. Scoresby, and numerous others." Some of these gentlemen were not personally acquainted with Swainson, and only knew him by reputation; but in England it was (and still is) regarded as quite proper to apply for and give letters of recommendation under such conditions. However, the application was not successful. Swainson "was refused, and a gentleman (I. G. Children, Esq.),

who knew nothing of natural history, was appointed chief of the zoological department." (It seems that as little respect was paid in England as in the United States now to ethical or natural proprieties!) Swainson's "disappointment" at this rebuff "was acute," but he was (or tried to persuade himself that he was) quite reconciled to it, and that he would live "to rejoice it was so ordained by Him, who foresees consequences we have no conception of." In such a happy state of mind and resignation, "although frustrated in this hope of adding to a small independence," he "determined no longer to wear out the rest of youth in longing for domestic life" and his "gentle friend thought the same." So they "were married in the autumn of 1825." Swainson was then 36 years old. He had his half-pay as retired "assistant commissary general," but he depended for support at that time in large part on his father who allowed him £200 (nearly \$1,000) a year. This source of income was lost the next year, however, when his "venerable father expired." Then "he began to think seriously for the future." Finally, "it occurred to him that no profession was more honourable than that of an author" and that he "might justly turn to pecuniary account that knowledge to gain which [he] had sacrificed so much".

Through the intervention of friends, he formed "a connection" with the great English publishing "house of Longman, Orme, Brown and Co.," which was destined to last nearly fourteen years. At first, Swainson was employed to revise "the entomological portion of Loudon's two Encyclopædias of Agriculture and Gardening." "An Encyclopædia of Zoology was next proposed, to match with those of Loudon's for which [he] was to execute all the drawings upon wood." On this work he "laboured incessantly for several years".

Swainson had lived at the residence of his father-in-law for some time after marriage, but in order that he might give the necessary time to the work he had undertaken with as little interruption as possible, he determined to take a house of his own sufficiently near London to be able to go there without too much expense of time or money, and yet far enough away to avoid too much interruption by visitors who would "drop in" and fritter away his time. He finally selected a home in the suburbs of the great city where he was to remain till 1840.

Swainson settled at Tittenhanger Green, within a mile of the little village of London Colney, Herts, somewhere about 18 miles northward from the heart of London and near St. Albans. This was "a spot so retired as to be completely out of the reach of morning visitors." Here, says Swainson, "surrounded with immense collections and a large library, I had all the materials of study under my own roof; my

facilities were great, and I improved them by occasionally visiting the collections in London."

He had secured a garden of fair size with a number of fruit trees and berry bushes and anticipated pleasure from their produce. But he was destined to be disappointed, for the birds were too numerous. The Tits and Bullfinches were especially offensive.* There were three species of Tits and they were so destructive that Swainson was provoked to declare that against them "a warfare of extermination should be carried on, — specially in winter, when they are easily seen in the naked hedges, and were readily shot." They bite "off the buds, particularly of the gooseberry bushes, they often reduce the prospect of a crop to one fourth of what it otherwise would have been. There are two of as fine cherry trees in our garden as were ever seen; but, from which the Bullfinches and Tom-tits so effectually pick all the embryo buds, that we have never had more than a handful of fruit during any one of twelve years." (He is writing in 1840).† "We were obliged to relinquish the growth of Indian corn, from the destructive propensities of these birds; they strip off the protecting leaves when the corn is just ripening, and will often pick out every grain." Other birds were so numerous as to be troublesome. "Black-birds, Thrushes and Robins are wholesale depredators on the small fruits, when they are ripe, — particularly the latter, two or three of which will strip a currant tree in as many days. Sparrows comparatively do little harm in gardens".

The Tits manifested their familiarity in other ways. "The Blue Titmouse (*Parus ceruleus*) has for several years built its nest within the crevice of an outside wall, caused by the giving way and bulging out of the stucco." Another family of the Blue Titmouse resorted to the pump to nest. "The pump in our garden has an outer framework of wood, the top being roof-shaped, and lifting on and off, in order the more readily to facilitate its repair. The spring of the year 1832 being rather wet, the pump was not used for some few weeks;" a pair of the Titmouse took advantage of this and built a nest; "the cylinder was completely closed up with hay, moss and feathers," forming a nest in which were five or six eggs. "In the adjacent woods of Lord Caledon," he sees Jays "which seldom alight on the ground," but whose "wild and discordant cries echo through the coppices, and evince that such wooded retreats are their proper haunts."‡

A more acceptable tenant of the garden was a family of Wrens. In 1836 writes Swainson,§ they "erected this spring among the creepers trained round our portico" a nest. "Its shape is irregularly oval and is so disproportionate to the size of the bird, that its greatest length measured near twelve inches; externally it seemed like a large bunch of withered leaves that had acci-

*This testimony of Swainson in relation to the injurious character of the Titmice is cited as timely, because the introduction of the Great Titmouse or "Kohlmeise" of the Germans (*Parus major*) has been strongly and frequently advocated lately. It has been recommended for its supposed value as a destroyer of the Codling Moth (*Carpocapsa pomonella*) but it has failed notably in Great Britain "to exterminate the Codling Moth or even to hold this pest in check." (See Palmer in Year Book of the U. S. Dep't of Agriculture, 1898, p. 105). Those who know of the injuries inflicted by the introduction of the "English Sparrow" will be careful about introducing any other bird, however innocent it may appear to be.

†Swainson, Habits and Instincts, p. 225.

‡Swainson, Birds, i, 130.

§Swainson, Birds, i, 179.

dentally got entangled among the slender and sinuous stems of the clematis, and the thicker branches of a sweet-brier. Upon looking at it more attentively, however, a round opening appeared on the side, just large enough to admit the entrance of its little architect;" it was what Swainson thought "he might call a *roofed* nest."

His "immense collections," the fruit of his own industry in the field as well as of purchase, were arranged as compactly and conveniently as could be devised by him. His method has been described in his *Natural History of Birds* as well as in his *Taxidermy*.

A century ago and more, "the custom" in England was, and continued till Swainson's time among some, "to place each specimen in a case by itself, proportioned to its size." This method, about 1820, according to Swainson "gave place to another much more elegant and compact. For land birds, large and small branches of trees are fixed into glazed cases, upon which the birds are grouped: little or no space is thus lost; and, if disposed with taste, they have a striking and beautiful effect. The water birds, in like manner, are grouped upon artificial rocks made of brown paper sprinkled with sand, &c.; yet still the subjects, from being permanently affixed, cannot be minutely examined, and those characters distinctly seen which are essential to its scientific description." This objection Swainson "endeavoured to obviate" by the following plan:—For land birds of a small size, [he] had cases made about 2 feet 5 inches high, 20 inches broad, and 9½ inches deep, the front being composed of a single pane of glass: one principal stem is made to send forth smaller branches, upon which the birds are permanently fixed, as in the common method: but the stem is strongly wedged into a square piece of lead, sufficiently weighty to support the whole: this lead is kept steady in the case by three of its sides being confined by slips of wood, or by the more secure expedient of being perforated for the reception of screws, which fasten it to the bottom of the case. When these screws are removed, the whole contents may be drawn out by a brass ring fixed in the lead, and the observer can thus handle and examine every specimen. For large birds, or those between the size of a Thrush and a Magpie, a different plan may be pursued. The cases are of two sizes: one being 2 feet 4 inches high, by 4 feet 2 inches broad, with three panes of glass; the other 4 feet 8 inches high, of the same breadth, with nine panes; the depth of both is 13 inches: the smallest, placed lengthways, serves as a pediment for the other; both are fitted up with strong branches, firmly secured by screws to the back and sides of the case. Each bird is

mounted upon a short strong stick, one end of which is made round, and is thrust into a corresponding hole in some of the branches: they should then be so firmly secured, that the bird is supported without any other assistance; but if it be large, or unusually heavy, a little glue may be added. Now, the advantages of this plan are great: for while the general beauty and variety of the whole is preserved, the naturalist is able to detach any one particular species for the purposes of examination, and to replace it, without the slightest injury to any others that may be placed upon the same branch."

Amidst such surroundings, he had his library and collections. His collections were condensed in a comparatively small room.

But Swainson early discovered that mounted skins were not the most useful for the ornithological student. He fully realized that "the preservation of *birds in skins*, or, more properly, in an unmounted state, is, above all others, the best for scientific purposes. Unless a bird is mounted more carefully than is usually done, some part, either of the bill, nostrils, toes, or claws, will be injured or distorted: it is, in fact, very rare to see exotic birds, after they have come from the hands of the bird-stuffer, in a thoroughly perfect state. Mounted specimens, even with the most ingenious contrivances, occupy a vast deal of room; and their preparation, at all times, is attended with much expense. Now, all these objections are removed by preserving them, as it is termed, in skins: when laid upon fine cotton, and arranged in cabinet drawers, they have a very pleasing appearance; they can be at all times handled, and minutely examined, without the least trouble; moreover, they lay in such a compact space, that, in a cabinet 5¼ feet high, 3 feet 3 inches broad, and 1 foot 7 inches deep, containing 36 drawers," Swainson had "a collection of near 600 specimens. Birds that have been purchased at sales, or otherwise, and that are already mounted," he disposed "in cases upon moveable stands, as before described. Until proper cabinets are provided, bird skins". Swainson advised, might be "preserved with great additional security, by wrapping them singly in sheets of soft paper, and examining each once or twice a year."

This method of preserving skins is thought by many ornithologists to have originated within the present half century, but here we have the evidence that Swainson (and others) had long before adopted it and that public museums and others were tardy in adopting a plan long ago instituted.

(To be Continued.)

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Comments.

SIGNIFICANCE AND ETYMOLOGY OF THE WORD MAMMALS.

A discussion arose a short time ago, respecting the relations of birds and mammals to each other as well as to reptiles. From the taxonomic question it finally drifted to a linguistic one, and to the origin or etymology of the word mammals or mammalia. There was general ignorance—or, let us rather say, misapprehension—respecting the word. Naturally recourse was had to the dictionaries for support of conflicting views, but, to our surprise, the dictionaries—big and little, vernacular and foreign—entirely failed to give the proper information.

Equally silent on the subject were all the general and special works on mammals, English and foreign. Indeed, it seems to have been vaguely assumed that there was something wrong or unusual about the word, and that it was an imperfectly formed one. Consequently it has been repeatedly attempted to replace it by one of more evident derivation—mammifers. As the question is one of much and general in-

terest, the senior editor of the OSPREY takes it on himself to consider it here.

The answer on first thought may seem to be obvious—especially after explanation! Considerable personal inquiry, however, has proven that it has not been, nor is it easily, recognized, and it is not correctly or fully given in any dictionaries. Of course it is clear that the essential component is *mamma*, breast, but how does the terminal element (—al) come in? The question is, then, what is the exact etymology or principle of composition of the word mammalia or mammals?

In the great Century Dictionary, a deservedly esteemed work, and which may generally be implicitly trusted, the etymology of MAMMALIA is given as “NL. (sc. *animalia*), neut. pl. of LL. *mammalis* (next. sing. as a noun, *mammale*), of the breast: see *mammal*.” and, under MAMMAL, we have “*a.* and *n.* [= OF. *mammal* = Sp. *mamal* = Pg. *mamal*, *mammal* = It. *mammale*, n.; < NL. *mammale*, a mammal, neut. of LL. *mammalis*, of the breast, < L. *mamma*, the breast.]”

All this is misleading, if not erroneous. The name mammalia was first coined and used by Linnæus in 1758, and was formed directly from the Latin; it had nothing to do with French, Spanish, Portuguese or Italian words. The concept of which the Linnæan word is the expression is as remote from a popular notion as could well be, and even the necessity for the word (or an analogous one) can be appreciated really only by the educated or, *pro tanto*, the scientifically educated: Buffon and Goldsmith, for example, could not realize the reason for its use.

It is noteworthy that in the Century Dictionary even the very word that might have given the clue to the formation of mammal is cited and yet the excellent professional etymologist was not guided into the right path. With the hint given to him in the plainest way, he failed to see the point. Evidently, then, the etymology is not as obvious as it might seem to be.

Often, indeed, in looking over etymologies, we have been impressed with the insufficiency of philological learning alone for the solution of knotty questions. A living knowledge of the objects named is often requisite for a full understanding of the significance or aptness of the names.

It was one of the happiest inspirations of Linnæus to segregate all the mammiferous animals—the hairy quadrupeds and the cetaceans—in a single class. No one before had appreciated the closeness of the relations of the

two types, and there was no name for the new class (or concept) as there was for all his others. A name, therefore, had to be devised. It was another happy inspiration that led Linnæus to name the class *mammalia*. Those who are familiar with the works and ratiocination, and especially the nomenclature, of the great Swede may divine his thoughts and share with him in the execution of his ideas, although he did not give etymologies.

The name in question was evidently made in analogy with *animalia*. In *animalia*, the principal component was *anima*, the vital principle or animal life;* the singular was animal. In *mammalia*, the essential component was *mamma*, breast; the singular should be mammal. The terminal element (—al) was coincident with rather than derived from the Latin suffix (—alis) which expressed the idea of resemblance or relationship; anyway, it was used in substantive form, and the idea of possession or inclusion was involved, as in the case of animal, capital, feminal, tribunal—all well known Latin words. In fine, a mammal is a being especially marked by, or notable for having, mamma.

The truth embodied in the word was almost immediately appreciated, and the class of mammals has been adopted ever since the Linnæan period by zoologists. Naturally the new Latin name was to some extent replaced by a name in the vernacular tongues of most nations.

In the accommodating English alone the Latin word was adopted with only a change in its ending, and thus the class name *mammals* was introduced, and the singular form—*mammal*—followed as a matter of course, and by chance (or rather the genius of language) exactly coincided in *form* with the singular of the Latin word.

Not only had the name nothing to do with the alleged derivative Latin words. It was not admitted at all into the vernacular speech of France, Spain, Portugal or Italy. The naturalists and lexicographers of those countries failed even to appreciate its etymological aptness and beauty. First, the French had to introduce a new word to correspond—*mammifères* or the breast-bearers. The other Latin races followed; the Spanish and the Portuguese with *maniferos*, and the Italians with *mammiferi*. Mammifers was even attempted to be introduced into English, but happily without success. None of the words quoted in the Century Dictionary are even given as nouns in the ordinary dic-

tionaries of those languages—not even in the great dictionary of Littré.†

Of course the Germans coined a word from their vernacular—*Säugethiere* or Suckling animals; the cognate nations imitated; the Dutch with *Zoogdieren*, the Swedish with *Däggdjuren*, and the Danes and Norwegians with *Pattedyrene*.

Condensing the data thus obtained into dictionary form we might have some such explanations as the following:

MAMMAL. [< NL. *mammalia*.] One of the *mammalia* *q. v.*

MAMMALIA, *n. pl.* [NL. (modelled after L. *animalia*, Linnæus, 1758); < L. *mamma*, breast + pl. suffix—*alia*. The singular (rarely used) is mammal, neut.]

The singular form—mammal—has been indicated as rare or unusual. One might look through many volumes on mammals as well as on general natural history and not find it. As a matter of fact, however, it may be frequently used. Let us go, for example, into a laboratory when they are assorting a miscellaneous lot of bones gathered from some fossil ossuary. Such expressions may be heard as “that seems to be a mammal bone”; “that *is* a mammal bone”; “that *is a mammal* bone; *that is a mammal* tooth—or the substantive mammal alone may be used. Further, whale may be alluded to as a gigantic mammal or a mammal giant.

The Century and Standard Dictionaries are, therefore, amply justified in giving mammal not only as a noun in the singular number, but also, as an adjective. Those dictionaries are the best in existence—not less so, we hope, because we assisted in editing them!

But we are in a critical mood and would therefore call attention to another lapse in the Century Dictionary. It is manifest in the cognate word *mammifer* thus defined:

MAMMIFER, *n.* [< NL. *mammifer*, < L. *mamma*, breast, + *ferre* = E. bear.] An animal having mamma; a member of the *mammifera*; a mammal.

If the definition of the word Mammal in the dictionary is surcharged with false analogues, *Mammifer* has not enough—not a proper one. For a time, in the early years of the century, there was a tendency to use the latter in English, but it was borrowed directly from the French *Mammifere* and not the “N. L. [New Latin] *Mammifere*.” In accordance with its formula the Dictionary, therefore, should have explained as follows:

*Animus est quo sapimus, anima qua vivimus.—Nonius Marcellus.

†Littré, however, has the words mammalogie, mammalogique and mammalogiste.

MAMMIFER † [obsolete] *n.* [= F. mammifère, < NL. mammifer, an assumed singular of mammifera, etc.]. A mammal.

The real status, however, would be better represented by the following:

MAMMIFERS. *n.* pl. [= F. Mammifères < NL. Mammifera]. Mammals. [Obsolete.]

The word was anglicized by the elision of the final French *e*, and thus the singular would in this case as in mammal, become assimilated to the original Latin, but that does not militate against the historical fact that it was adopted from the French.

It is amusing to notice how long the Linnæan concept and name failed to gain entrance into French works. In Valmont-Bonare's "Dictionnaire raisonné universelle, d'Histoire Naturelle" (e. g. 4e ed., 1791) no allusion has been found to Mammalia or Mammifères under Animal, Mam, or Quadrupedes. Under Animal, (I. 236) Linnaeus is said to have divided animals in six classes and the first is called "Quadrupedes" instead of Mammalia, as it was called by Linnaeus, from 1758 onwards. Between the concepts expressed by the terms Quadrupedes and Mammals the difference is vast.

UNPUBLISHED CORRESPONDENCE OF WILLIAM SWAINSON.

Those of our readers who may have become interested in the life and experience of William Swainson will be pleased to learn that his correspondence with contemporary naturalists has been acquired recently by the Linnæan Society of London. It is said to extend from 1806 to 1840. (In 1806 Swainson was only 17 years old, and was about to be appointed to the commissariat department of the British army, and to start for Sicily, as will be seen by reference to the OSPREY for March). This correspondence, it is further reported, was the subject of the annual address of the retiring president of the society (Dr. Günther) delivered at the anniversary meeting on May 24th. As Dr. Günther has manifested great contempt for Swainson's ichthyological work, and, in fact, completely ignored him, we will be greatly interested to see his manner of treatment of the subject. We may hope to be able to make use of some of it in the biography now in course of publication.

Letters.

A COLOSSAL BIRD!

What is it?

NEW YORK, April 21, 1900.

In a paragraph of a daily newspaper a short time ago, I found the following piece of information.

"The *Westminster Gazette* describing an eagle whose fossil remains are on exhibition at the Natural History Museum at London, says the head is larger than that of an ox, and that when alive it could have killed and torn to pieces creatures larger than a lion."

What is the basis of these statements? Is there any truth in them?

Yours truly,

A. C. W.

Answer.

The notice sent to us is too vague to enable us to answer the question propounded with certainty, but it is probably based on the fact that parts of a gigantic bird formerly living in the Argentine republic have been acquired by the British Museum (Natural History) and have been put on exhibition. The bird alluded to has been named *Phororhachos longissimus*, and it lived in the late tertiary age in the southern part of South America (Argentina and Patagonia). It was not at all related to the eagles, however, and was more nearly akin to the Screamer or *Cariama* now living in the same regions. Allusion has been made to it in previous numbers of the current volume of the OSPREY (p. 78) as

one of the largest birds that have ever lived. The newspaper article, however, exaggerates its size as well as strength and disposition. Perhaps a better idea might be received of it by the statement that its head is about the size of a horse's (narrower than an ox's) without the lower jaw.

BIRDS OF CUBA.

EDITORS OF THE OSPREY:

NEW YORK, April 25, 1900.

We have been hoping that you would have given us before this an article on the Cuban birds as you promised some months ago. When will the article appear? Meanwhile, kindly give the title of some work on Cuban birds.

Yours truly,

C. A. C.

We have not yet secured the article we had expected on Cuban birds, but hope to have it before very long, and after our travellers have returned from the island. "Meanwhile" we give the title of the latest work on Cuban ornithology. It is by Dr. Juan Gundlach, and entitled "Ornitología Cubana ó Catálogo descriptivo de todas las especies de Aves tanto indígenas como de paso anual o accidental observados en 53 años". In plain English, it is a descriptive catalogue of all the species of birds, resident as well as migratory and accidental, which have been observed by Dr. Gundlach during his residence on the island of 53 years. It was published in Havana in 1895, and is a

volume of 328 pages with 14 photographic plates, including a portrait of the author.

The photographs are mostly of mounted birds, and as a rule the birds were not well mounted. 262 species are described. We are sorry to have to add, however, that the work is not easy to procure, and as it is in Spanish we presume it would be a closed book to many. It was originally published as an appendix to a medical journal—"Archivos de la Policlínica."

The most recent considerable list of Cuban birds in English is by Mr. Frank M. Chapman, and records the results of his collecting about Trinidad in March and April, 1892. It is entitled "Notes on Birds and Mammals observed near Trinidad, Cuba, with remarks on the origin of West Indian bird-life", and is published in the Bulletin of the American Museum of Natural History (IV, 279-330). Mr. Chapman found

99 species of birds. In his general "remarks" he states that in the "greater Antilles these are 169 land birds and 5 water birds "peculiar to the West Indies" and they are distributed as follows.

	Total.	Endemic.
Jamaica	66	42
Cuba	68	45
Hayti	56	34
Porto Rico	46	25

These figures would not be materially modified by recent discoveries. We may add, however, that when Chapman wrote Gundlach had only found 257 species instead of the 262 recorded in his "Ornitologia Cubana".

The relatively small number of birds attributed to the large island of Hayti is probably due to less knowledge of the fauna rather than its absolute poverty.

Notes.

THE REMAINS OF THE LATE DR. COUES were transferred from the receiving vault where they have been since the funeral in December to their final resting place, on Tuesday, the 29th of May: this is Arlington Cemetery, near Washington, originally the residence of General Robert Lee, and long devoted to the burial of soldiers and sailors.

THE SMALL EMU OF KANGAROO ISLAND has a singular history. Three individuals were caught in 1803, and taken alive to France by the French Scientific Expedition under the command of Captain Baudin. (The island was then named "Isle Decrès.") Two were sent to "La Malmaison", then the favorite residence of Josephine, Napoleon's consort, and one to the Jardin des Plantes. Two lived till 1822, and then one was skeletonized, and the other mounted for the museum. The third was entirely lost sight of till recently, when the Hon. Walter Rothschild, during a visit to Florence, had his attention directed to a skeleton that had been laid aside by Professor Giglioli, director of the Royal

Zoological Museum; he recognized in it the little Emu of Kangaroo Island, and concluded that it was the remains of the third Emu caught in 1803.

This Emu was found in large numbers on the island when discovered, and troops regularly descended to the sea shore to drink the salt water at sunset. The island was subsequently settled upon by a squatter who immediately proceeded, in the manner of civilized (!) men, to exterminate the birds, and was so successful that the species has been long extinct. It was like the common Australian Emu, but much smaller, and the feathers of the neck were entirely black. It was described by the celebrated naturalist of the Expedition, Pèron, but supposed by him to be of the same species as the Australian bird: its distinctive peculiarities were appreciated later by a better ornithologist, Vieillot, and by him called *Dromaius ater*.

This account has been condensed from one in *Nature* for May 31, (p. 102,) by Dr. Giglioli who promises a more detailed notice later.

Literature.

A NEW EDITION OF WHITE'S SELBORNE has been added to the already very long list. The last is edited by the eminent ornithologist, Dr. R. Bowdler Sharpe. It will be completed in two volumes with the title "Natural History and

Antiquities of Selborne and a garden calendar." The publisher is S. T. Freemantle of London. There are numerous plates and other illustrations. The plates are said to be very fine.



Nest and Young of Orchard Oriole (*Icterus spurius*).
(Photographed from Nature.)

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BIRDS OF THE ROAD.—VII. HIGH SUMMER.

By PAUL BARTSCH, Washington, D. C.

The bird movement seems at last to have attained an equilibrium, at least the hurrying northward has ceased and those forms, which we see about us now, have selected sites and have built homes from which they have led, or will lead happy little families provided the fates are propitious. The birds which we see about our homes now, are the same which we saw yesterday, the same which we will see tomorrow. June, July and early August are the

uncomfortable heat which you experience, about the time when the clock admonishes you that you will soon be due at office. You forget all about the heat of the previous day, as you pass along the cool road and listen to ever joyous notes of the birds which greet you everywhere.

The Chat, the Cat Bird, the Thrasher and the Song Sparrow are all voicing their happiness and now and then a Robin adds his cheerily,



The Song Sparrow *Melospiza melodia*.
(From Year Book D. A. 1898.)

months in which we may become acquainted with individuals, for when a bird has selected a nesting site, it rarely wanders far from the chosen place.

What a pleasure it is now, to take a spin in the early morning, long before the sun mounts high enough in the heavens to make you feel

cheerily, so cheerily. But the Robin is not nearly so abundant about Washington as we would have him be. The Chat is a veritable clown and though you watch him for hours, you will never tire of his ever changing attitudes and notes. He is an avian acrobat and contortionist. If you will patiently seat yourself on

the side of a brush bound path or hedge, where you have heard him whistling, very much as a boy whistles for his dog, suddenly changing to a rippling laugh, you will see some of the strangest antics, antics which only a Chat can perform. You will see him launch out into the air with his legs dangling, his tail drooping, and his wings cast away over his back almost touching when raised, and apparently not passing below the horizontal plane when lowered, as he laboriously wings his way through space, emitting with each descending stroke, a loud, low, laughing note. Alighting on a new near by branch you will see his distended throat quivering as he sends forth strain upon strain. He is without doubt the most cheerful of all our singers and each note, even the harsher calls, are interesting and pleasing, all the more so if you can watch the performer. Sometimes it appears to me as if the Chat was a grand mimic, and I imagine I can recognize the notes of a host of our songsters, the Cuckoo and Great Crested Flycatcher being in part responsible for the harsher cries, but there are so many others, aside from the many familiar ones which I am unable to place, that I am forced to give it up and am willing to attribute originality to his notes as well as to his actions.

As you continue your journey and pass an upland meadow you will be sure to hear the whirring note of the Grasshopper Sparrow and scanning the regions from which the sound appears to emanate, you will behold the little fellow seated all puffed up upon a slender reed stalk, whirring away at his song as if his very life depended upon it. You will leave your wheel and seek a nearer acquaintance. Beating back and forth through the short dewy grass, you will suddenly see another little brown body glide rapidly over the ground on quivering wing, dropping suddenly into the grass only to emerge almost at once to post herself upon an elevated bit of reed to observe your movements. If you have been shrewd and have marked the very spot from which you saw her emerge, you will very likely be down upon your knees, inspecting a neat little dome-shaped structure not unlike that of the Oven Bird, but composed of blades of grass instead of the leaves of trees, which are usually employed by auricapillus. Within this partly immersed cup you will note four very pretty eggs, whose white ground is beautifully spotted with richest brown.

The uneasy chirping of the birds will not infrequently bring a pair of Field Sparrows to the scene, and you may rest assured that their nest with its four little ones is not far away.

Sometimes too the Meadow Lark will be found in fields like these, but the Meadow Lark now is not the bird of the Spring, at least one is made to feel that it is quite another individual. He is so silent at present, but we will have to pardon him also for this too is his busy time.

Another bird most conspicuous at this season is the Cuckoo; he is ever on the move and you

will be sure to meet him in your morning ramble peering cautiously and curiously at you, almost snake like, from some leafy covert. You will be likely to meet with Waxwings, true Flycatchers at present, also Yellow Warblers, and if your way leads through a thin pine copice the Prairie Warbler is sure to add his name to your list—as well as a host of the commoner forms which greet you everywhere.

Pursuing your spin through leafy avenues you will note the Vireos: the Red Eyed babbling cheerfully amongst the trees is much more numerous than his cousin, the Warbling, who even seeks the busy haunts of men and warbles his glad song amid the bustle of our crowded thoroughfares.

Not infrequently, too, you will meet a Mourning Dove, or more likely a pair of them or perhaps a whole family, enjoying a dust bath in the middle of the very path you are pursuing. But this is usually later in the day when the sun is making things uncomfortably hot and more often at eve just before he sinks out of sight.

Last month we complained of our inability to find the Orchard Oriole's nest which we had been looking for upon our premises. It was another case of searching in the distance for an object near at hand. The chatter of the young revealed its whereabouts the day before its four young occupants left it. It was located in a small pear tree, scarcely ten feet from the ground—in fact the tree itself is hardly more than fifteen and it had never occurred to us that Spurius would select such a position, when many better ones, at least so it seemed to us, were available. Spurius' reasons, however, were better than ours, as the long failure to detect the nest will testify. The frontispiece shows two figures of the nest and its occupants. I have all cause to believe that all went well with the four young, although they had been induced to leave the nest prematurely by the parents, owing to the disturbance caused by our taking the picture. They nevertheless seemed to thrive well and were present at roll call for many an evening, and even now we hear and see some of them occasionally.

The Chimney Swifts too are clattering in the chimney, but the little Hummers had to register a second misfortune. Their nest was this time placed in too prominent a place, and I found the locust limb broken down even before they had completed the little structure. They seem to have left the neighborhood and we certainly hope that they have found a location which will accord them more happiness.

JULY 4.

Desiring to escape the noise and tumult which ever accompanies this glorious day, we acquired a boat at Georgetown and betook ourself up stream to celebrate in a way much preferable to us to the burning of fizbangs and firecrackers. It was a warm day, but where, about the City of Washington, could you find a place more

suitable to spend a hot day, than among the many shady glens which abound on the Virginia side of the Potomac.

Rough-winged and Bank Swallows were everywhere in evidence, the first finds many suitable crevices among the quarries and bold bluffs in which to place the few straws, employed as a bed for the compliment of four white, oval, eggs. The Bank Swallows, on the other hand, are more social and instead of seeking crevices, they dig into the clayey soil. Usually a colony, sometimes numbering hundreds, seek a favorable spot, which by the way is usually resorted to year after year. Here they excavate long burrows nearly three inches in diameter and three to five feet in length, in the expanded farther extremity of which they deposit their eggs. I have found the Rough-wing occupying a similar situation in the East, but never in the Mississippi Valley. I have in mind a small colony consisting of perhaps six or eight pairs occupying an exposure at the base of the hill, immediately West of the power house at Four-mile-run, Virginia.

The Bank Swallow does not always select a wise situation for its nest. In '89 I found a colony of many hundred, in fact the largest that I have ever seen, established in a sand pit about two miles west of Gladstone, Illinois, on the main line of the C. B. & Q. R. R. At this place sand is dug, loaded on cars, shipped over the road and used for ballast along the track. The vertical exposure thus produced was some

half mile in length and perhaps twenty feet in height. The colony, no doubt, had selected this place on account of its isolation and easy excavating. Enemies indeed seemed few in this out of way place and yet there was one which made up for a whole host of town boys, yes, this one proved a varietable nemesis which swooped down upon them with every rain storm coming from the north. Each shower would wash the loose sand down the exposure and thus seal many a luckless mother bird, who was faithfully guarding her treasures in a living grave. I unearthed quite a number of such individuals and concluded that the mortality from this cause was not a slight one.

A strange companion to the Bank Swallow colony observed up the river on the fourth, was a Belted Kingfisher, who had dug his long burrow in the same exposure, a little to one side of the colony proper. Both being well in sight of the river, their common play and hunting ground.

We paddled steadily until we reached the ravine about a quarter of a mile below Chain Bridge. This ravine can boast of a very noisy stream, which tumbles over many a rocky cataract ere it merges its waters with the Potomac. Here we landed, swung our hammocks, spread our luncheon and enjoyed the day in lazy leisure.

Quite a number of birds called on us while we were thus employed. The most persistent of which was the Acadian Flycatcher whose jerky chebeck was ever heard, and I strongly



The Mourning Dove *Zenaidura macroura*.
(From Year Book D. A. 1898.)

suspect that some of the long swinging branches which extended out over the rivulet, bore his fragile nest. A pleasant surprise was granted us, when a Kentucky Warbler announced in brilliant tones that there was a birdy-birdy-birdy-birdy-birdy, in the bush, we believed him and were rewarded for our careful search by seeing him.

The Kentucky breeds quite abundantly with us in sheltered ravines immediately adjoining the Potomac, and more often in sheltered situations along its rock bound shores. I have

found them all along from the ravine just mentioned to above the Great Falls, and consider this sweet, shy, yea, very seclusive singer, one deserving a special word of praise.

The Carolina Wren called on us also and left us shortly, seeing that everything was in order, and a Tufted Tit whistled a passing note and then engaged the wren in a discussion which sounded very much like Ophelia-Ophelia-Ophelia-Ophelia, to which the other responded vigorously with Jimmie,-Jimmie,-Jimmie,-Jimmie.

WILLIAM SWAINSON AND HIS TIMES.—V.

BY THEODORE GILL, Washington, D. C.

(Continued from page 156.)

As soon as Swainson and his wife were established in their new home, he settled down to work. Primarily that work was the *Encyclopaedia of Zoology* in course of preparation for Longman & Co. He continued his original studies, however, especially in ornithology.

ORNITHOLOGY IN THE FIRST QUARTER OF THE CENTURY.

As hereinbefore hinted at, the progress of ornithology was less rapid in England in the first quarter of the century than in France or even than in Germany. Swainson had deplored this backwardness* and so did N. A. Vigors in the introductory remarks of his *Sketches in Ornithology*.† Therein he proposed to "bring together for the first time in [England] the modern genera that have been established by foreigners; for strange to say," says he, "we have no work of English growth on ornithology, which professes to give more than the genera of Linnaeus, with some unimportant additions." He excepts from this general blame his "friend Mr. Stephens, whose introduction of the modern views on ornithology into the last volumes of [the continuation of Shaw's *General Zoology*] that have come more especially under his care, and whose ability in unfolding them, is deserving of every commendation." He also adds that "the same views, and more particularly those of M. Cuvier, are to be found briefly referred to in Dr. Fleming's valuable work on the 'Philosophy of Zoology'".

Even the principles of subdivision and subordination of the groups of birds were in a nearly chaotic condition. For instance, it had become recognized by many that the adoption of a category between the family and genus would be at least convenient, if not necessary, for the exposition of the relations of the genera, but the name for such a category had not become fixed. As early as 1806, indeed, Latreille had introduced the term tribe ("tribu") for that group and in 1815 Rafinesque had used the designation subfamily ("sous-famille"). John Edward Gray

in England had already used that word, but the ornithologists for a time were undecided. It is noteworthy that Swainson evaded giving a distinctive name to the primary subdivisions of a family. In his first systematic article* he had five primary sections into which he divided a family—the "family of Laniadae." After certain irrelevant introductory remarks, he proceeded at once to consider those sections without telling what he would call them. *Laniadae* are named (p. 293) but not designated; *Thamnophilinae* are designated in one place as a "group" (p. 296), in another (p. 302) as a "tribe," and in a third (p. 300) as a "family," while in one place (p. 299) the *Laniadae* are called "a tribe." Again, the *Edolianae* are called (p. 300) "the third family of" Laniadae.

Vigors, in an article immediately following Swainson's entitled "Sketches in Ornithology," in observations "On the Groups of the Falconidae," divided the Falconidae into two typical groups, one ("typical") with two stirpes ("Stirps *Accipitrina*" and "Stirps *Falconina*" and another ("Aberrant") with three stirpes.† Later, in 1825, in a section of his "Sketches in Ornithology," "on the arrangement of the genera of Birds," he calls the same groups subfamilies‡ ("Subfam. Aquilina," "Subfam. Accipitrina," "Subfam. Falconina," etc.) Still later, apropos of "Stirpes," he explains:§ "This term which I at first used as designating the immediately subordinate subdivisions of a family, had been previously employed by Mr. MacLeay, as representing a group of higher value than that of a family. I have consequently altered the term, in my subsequent sketches, into that of *subfamily*".

Vigors, indeed, in an article in the same number of "the Zoological Journal" which included the first instalment of his "Sketches in Ornithology,"|| used the word "Stirps" in the MacLeayan sense. In this article, entitled "Descriptions of some rare, interesting, or hitherto uncharacterized subjects of zoology," he used the word "Tribus" as a subordinate of order but including

*Zool. Journ., i, 289-293.

†Zool. Journ., i, 308, 316, Oct. 1824.

‡Zool. Journ., ii, 392.

§Zool. Journ., ii, 518.

||Zool. Journ., i, 413-415.

family, and for insects he admits between the "Tribus" and "Familia" the category named by MacLeay "Stirps."

In 1825, then, the name "subfamily" was settled upon as the designation to be given to the primary subdivision of a family in ornithology and so it has remained with scarcely any exceptions to the present time.

SWAINSON'S ADOPTION OF QUINARIANISM.

In 1824, in "An Inquiry into the natural Affinities of the Laniadae, or Shrikes; preceded by some observations on the present state of ornithology in this country,"* Swainson gave in his adhesion to the fundamental propositions published by William S. MacLeay in 1821 in his "Horæ Entomologicae." He urged that "Ornithology is neither a study of names, nor of feathers," but rather "teaches us to enquire what place [a bird] occupies in creation; what functions it is destined by Almighty Wisdom to perform; how its organization corresponds to these functions; and lastly, its various relations to other animated beings." Such an "undertaking," he says, "is a new and intricate field of enquiry; which, to the honor of Britain, has been opened to us by one of her sons." He then proceeds at once to apply the principles in question to the Laniadae.

In this article, he briefly reviews the groups Lanianae, Thamnophilinae, and Edoliana.† He proposed to continue his article "in the next number" of the Zoological Journal, but never did so.

The first article he issued from his new residence, "Tittenhanger Green," was devoted to a fuller exposition of his quinarian views, and although on an entomological subject, must receive our attention for a moment. This article was "A Sketch of the Natural Affinities of the Lepidoptera Diurna of Latreille" contributed to the first volume of "the Philosophical Magazine" started in 1827 (p. 180-188). This was dated "Feb. 1st, 1827." He confessed his creed explicitly in that article. It was his "firm conviction that the Almighty Author of the universe has created all things that have life upon one plan; and that 'this plan is founded on the principle of series of affinities returning into themselves;‡ which can only be represented by circles.'" He duly credited "this sublime discovery, sufficient of itself to immortalize a name," to his "illustrious countryman," William Sharp MacLeay. He avows that "in the winter of 1823," he had "attentively studied" the same insects, but "deferred" publication "from a desire of procuring further information." The system adopted was strictly quinarian, but admitted a "typical group" with two families and an "aberrant group" with three.

NEW GENERA AND SPECIES.

Soon after his Sketch of the Lepidoptera Diurna was published, Swainson completed two

articles, to some extent complementary to each other, one containing descriptions of many new American species and the other diagnoses of many new genera. The former, entitled "A Synopsis of the Birds discovered in Mexico by W. Bullock, F. L. S. and H. S., and Mr. William Bullock, Jun.," was published in "The Philosophical Magazine" for May and June, 1827, (i, p. 364-369 and 433-442). The latter was "On several Groups and Forms in Ornithology not hitherto defined" and was published in the tenth and eleventh numbers ("No. x" and "No. xi") of "The Zoological Journal" for "April-September, 1827" and "September-December 31, 1827," (iii, p. 158-175; 343-363).

The "Synopsis" was an enumeration of nominally 101§ species of Mexican birds of which no less than 65 were supposed to be new—of the 65 new species 18|| have been discovered since within the territories of the United States. They are named below, with addition of the numbers of the "synopsis" and the generic names adopted for them by the American Ornithologists' Union.

6. *Hirundo thalassinus*—*Tachycineta*.
12. *Tyrannula nigricans*—*Sayornis*.
18. *Setophaga miniata*—*Setophaga*.
19. *Setophaga rubra*—*Ergaticus*.
28. *Cinclus mexicanus*—*Cinclus*.
33. *Orpheus curvirostris*—*Harporhynchus*.
37. *Sialia azurea*?—*Sialia sialis azurea*.
45. *Pipilo maculata*—*Pipilo*.
53. *Carduelis mexicanus*—*Spinus psaltria mexicanus*.
60. *Xanthornus Bullocki*—*Icterus*.
64. *Icterus cucullatus*—*Icterus*.
71. *Pyrranga hepatica*—*Piranga*.
75. *Guiraca melanocephala*—*Habia*.
90. *Crotophaga sulcirostris*—*Crotophaga*.
92. *Trochilus fulgens*—*Eugenes*.
95. *Trochilus platycercus*—*Scelasphorus*.
96. *Cyananthus latirostris*—*Iache*.
99. *Cyananthus lucifer*—*Calothora*r.

Swainson, in his Synopsis, remarks: "The generic definitions will, I hope, shortly appear in another Journal, to which they have been sent, with the intention of preceding the publication of this paper, ever since last November [1826]. By this unfortunate delay, I am reduced to the unpleasant necessity of referring to a book not yet published, for what the reader should have the immediate power of consulting."¶

As indicated in the title, the birds of the Synopsis were collected by the Bullocks in Mexico. The career of the elder Bullock was quite interesting and some notice of it will be taken in a future number of the OSPREY.

In the Synopsis, a generic name was also introduced which has had a limited currency—*Scaphidurus*. Swainson expressly says (p. 431) that "M. Vieillot's name for this group, *Quiscalus*, being already used in botany, I propose to call it *Scaphidurus*, as expressive of the singular boat-shaped tail common to most, if, not

*Zool. Journ., i, 289-307.

†Zool. Journ., i, 293-307.

‡MacLeay; Horæ Entomolog., Part ii, p. 459.

§37 is repeated (p. 369, 433) and consequently there are 102 specific names.

||The 18 only cover the species now regarded as valid and not the synonyms.

¶Phil. Mag., i, 365.

all, of the species." In other words it is given as an exact synonym of *Quiscalus*. Nevertheless, while *Quiscalus* has been credited with "*Q. versicolor*" as its type, *Scaphidurus* has been changed with "*Q. versicolor*" as its type in the Catalogue of the Birds in the British Museum" (xi, 393).

In his article "On several groups" [etc.], he characterizes "sixty-four" groups as "new divisions" or genera, but of these some were new in range or restriction rather than absolutely, as *Tyrannus* (Cuvier), *Synallaxis* (Vieillot), *Saxicola* (Bechstein), *Alauda* (Linnæus), *Tanagra* (Linnæus), *Dendrocolaptes* (Hermann), and *Trochilus* (Linnæus). By the unfortunate delay in publication of this article, the range and type of two of the genera (*Ammodramus* and *Cyanthus*) are affected.

Of the new nominal genera, fourteen are represented in the North American fauna, viz: *Orpheus*, *Trichas*, *Sylvicola*, *Vermivora*, *Seiurus*, *Sialia*, *Spermophila*, *Ammodramus*, *Guiraca*, *Dolichonyx*, *Colaptes*, *Setophaga*, *Chamæpelia*, and *Ectopistes*. Two others, *Ptiliogonys* or *Ptilogonatus* and *Tyrannula*, were for a time adopted for certain birds of the United States, but erroneously.

But a number of these genera were "really new" only to Swainson. Some of them had been previously named before, unknown to the English naturalist, or the names given to them had been used earlier.

Those named before were *Orpheus* (= *Mimus* Boie, 1826), *Vermivora* (= *Helmintheros* Rafinesque, 1819), and *Chamæpelia* (= *Columbigallina*, Boie, 1826).

Those whose names had been already taken for other genera are *Trichas* (not of Gloger, 1827) and *Sylvicola* (not of Harris, 1782). *Trichas* was first used by Gloger only a couple of months (March) before Swainson.

Several of these names were badly formed; *Chamæpelia* should have been written *Chamæpelia*, and *Ammodramus* *Ammodromus*. *Chondrestes* would have been better at least as *Chondrestes* but, even thus bettered, it would not be entirely correct: *Chondredestes* would convey what was meant. Swainson manifested in the formation of these names his usual philological weakness.

Otherwise, not one of his lapses was discredit-able to him. When he wrote his articles, Boie's had not been published, and communication with Germany was not as easy then as now. Some naturalists still adhere to his name (in the correct form *Chamæpelia*) for the Ground Dove. Salvadori,* remarks, that "*Columbigallina*, Boie, a long, badly constructed name, without generic characters, ought not to supersede *Chamæpelia*, Sw." We may sympathise with the sentiment of Salvadori, but it will be better to adhere to the rules of nomenclature and follow the American Ornithologists' Union in adopting *Columbigallina*. Rafinesque's name *Helmintheros* was published in an obscure journal in which such matters would scarcely be sought for.

One of the most interesting episodes in the life of Swainson interesting especially to American ornithologists—was the intercourse between the British naturalist and Audubon. This began in 1828. Swainson was thirty-nine and Audubon forty-eight years old. The former had been settled about two years at Tittenhanger Green, and the latter had been resident about as long in England on his first visit.

Audubon, in the winter of 1825-6, had resided in Bayou Sara, Louisiana, and given "lessons in dancing" to some young ladies under his wife's care, and "lessons in fencing" to some youths, "and was so successful that the residents of Woodville, fifteen miles distant, engaged him for Friday and Saturday of each week, and here he had over sixty pupils." It seems that "these lessons continued three months, and were in every sense a success," Audubon realizing about \$2,000 from his winter's work. With this and "the greater part of the savings of his wife," he "left New Orleans for England" on "the 26th April, 1826," to see about the publication of his work. Of course he took his drawings and paintings.

Most of his time was spent in Scotland, but he was in London in April, 1828, and J. C. Loudon, the editor of a scientific journal just about to be started, called upon him and "said he was anxious to have a review of [Audubon's] work in his magazine, and would write to Mr. Wm. Swainson, a naturalist and friend of Dr. Traill's, [a friend of Audubon,] to do so." The willingness of Swainson to write the review was manifested by an article (dated Tittenhanger Green, April 11, 1828) contributed to the first (May) number of "The Magazine of Natural History" published very soon afterwards. Swainson, it seems, had never seen Audubon, and borrowed the plates he noticed. He speaks of them in the highest terms, and finds no fault. He selects, for special comment, plates 6 (Wild Turkey), 7 (Purple Grakles), 7 ("The Bird of Washington"), 12 (Baltimore Oriole), 16 (Great-footed Falcon), 17, 21, 22, 25, 26 and 27.

Although Swainson had not seen Audubon when he wrote the notice of his plates, he soon afterwards took means to do so. In "the afternoon" of April 17, Audubon "received a letter from Mr. William Swainson, inviting [him] to spend a day with him."

Preliminaries having been settled, Audubon proposed to pay a visit to Swainson on the 21st of April, 1828, but the "weather was shocking"; the coachman he would hire told him "it would be madness to go that day, as his house lay off from the main road fully five miles, and it was a difficult place to find; moreover, the country, he said was *swimming*."† Consequently he deferred his visit till the 28th of May when he reached the place and remained there till the 1st of June. He finds that "Mr. and Mrs. Swainson have a charming home." He considers "Mr. Swainson a superior man indeed" and thinks "Mrs. Swainson plays well on the piano, is

*Birds Brit. Mus., xxi, 472, 1893.

†Audubon and his Journals, 1, 296.

amiable and kind," and he sees "their children blooming with health and full of spirit". The Swainsons and Audubon are congenial. "Such talks on birds we have had together"! enthusiastically writes Audubon. The American artist-ornithologist "began a drawing for Mrs. Swainson and showed Mr. Swainson how to put up birds in [his] style, which delighted him."

On the 19th of August, Swainson invites Audubon to visit again "Tittenhanger Green, where the pure air, the notes of the birds, the company of [Swainson's] wife and children revive," says Audubon, "my drooping spirits."* (These children, be it remembered, were babies, for Swainson had been married less than three years before.) In the home at Tittenhanger Green, Swainson and Audubon conversed much about the collections and men at Paris, and both expressed a strong desire to visit the great city and see the museums and the officials that administered them. At that time, there were no collections in England that approached those in Paris. Then the British Museum was as much inferior to the French as it is superior now. The French city was then the undisputed metropolis of science and a pilgrimage to it was the duty of every pious naturalist. Swainson wished to go there to examine numerous types of birds not to be found in England, and Audubon hoped to obtain subscriptions to his magnificent *Birds of America*. Up to that time, however, Swainson had not fully made up his mind to go.

VISIT TO PARIS.

Swainson in his autobiographical sketch says: "In 1828, I was induced to spend six weeks in Paris, for the purpose of studying the inessential birds contained in that superb collection. By spending seven hours daily in the Garden of Plants, I succeeded in making drawings and descriptions of nearly every species I did not possess; and thus fortified, I ventured to give the outlines of my views in the *Northern Zoology*". He has repeatedly alluded to this visit and its results.

It was made finally at the suggestion of Audubon, it seems. The latter, on August 13th, says he "wrote to Mr. Swainson asking if he could not accompany me to France, where he said he wished to go when we were talking together at Tittenhanger." The next day, (Tuesday, August 14th.) Swainson went to London; "he had come to take [Audubon] to Tittenhanger Green," and there arrangements were perfected to make the visit to Paris. A party was determined upon. At the beginning of the next month and on Monday, (September 1,) Audubon and the portrait painter Parker,† after a "breakfast at six," were soon "joined by Mr. and Mrs. Swainson and proceeded to the office in Piccadilly" for the coach

in which they started in due time for Dover. The next day they left Dover, and arrived in Paris on Thursday, (September 4th.) "were put down at the Messagerie Royale, rue des Victoires," and then "went to lodgings to which they had been recommended." "Mrs. Swainson's brother, Mr. Parkes, came to see [them] at once, and all went to the Jardin des Plantes," where they "saw everything."

Next to "everything," individuals were to be seen—especially those who controlled the "things." Pre-eminent among those persons was Cuvier.

Cuvier had only a couple of weeks before (August 25th) passed his 59th year and had reached the acme of his fame, power, and industry. (He had less than four more years of life before him.) With practical unanimity, he was recognized as the greatest zoologist and anatomist that then lived or, indeed, had ever lived. He had received innumerable honors of every kind, literary and scientific, administrative and political. He had already corrected the proofs of the first and second volumes of the second edition of his "*Règne Animal*" which was to be published in five volumes in the following year; the first two volumes of the great *Histoire Naturelle des Poissons* had recently been published, and the next two were nearly ready for the press. He had also completed notes for a new translation of Pliny. Such was his industry! He had in addition various public functions to engage his attention, and was practically the chief of the Museum of Natural History (Musée d'Histoire Naturelle).

"We saw everything," continues Audubon,‡ and "then we walked to the entrance of the famous Musée; it was closed, but we knocked and asked for Baron Cuvier. He was in, but, we were told, too busy to be seen. Being determined to look at the Great Man, we waited, knocked again, and with a certain degree of *firmness* sent our names. The messenger returned, bowed, and led the way upstairs, where in a minute Monsieur le Baron, like an excellent good man, came to us. He had heard much of my friend Swainson," says Audubon, "and greeted him as he deserved to be greeted; he was polite and kind to me, though my name had never made its way to his ears. I looked at him, and here follows the result: age about sixty-five; size corpulent, five feet five, English measure; head large; face wrinkled and brownish; eyes gray, brilliant and sparkling; nose aquiline, large and red; mouth large, with good lips; teeth few, blunted by age, excepting one on the lower jaw, measuring nearly three-quarters of an inch square. Thus, my Lucy," writes Audubon to his wife, "have I described Cuvier almost as if a *new species of man*. He has invited us to dine with him next Saturday at six, and as I hope to have many opportunities of seeing him I will write more as I

*Audubon and his Journals, i, 300.

†Parker became acquainted with Audubon in Natchez, (Mississippi). In August he met Audubon in London and asked him, says Audubon, "to permit him to paint my portrait as a woodsman, and though it is very tiresome to me, I agreed to his request." By August 25, Parker had "nearly finished" the portrait "which he considers a good one, and *so do I*," adds Audubon. Miss Audubon notes that "no trace of this portrait can be found".

‡Audubon and his Journals, vol. 1, p. 306, 307.

become acquainted with him." He also made an appointment with them for Friday, and on that day, says Audubon, "gave us tickets for the Musée, and promised all we could wish. At the Musée M. Valenciennes was equally kind. Having a letter for M. Geoffroy de St. Hilaire [Etienne Geoffroy Saint Hilaire], we went to his house in the Jardins, and with him we were particularly pleased. He proved to me that he understood the difference in the ideas of the French and English perfectly. He repeated the words of Cuvier and assured us my work had not been heard of in France. He promised to take us to the Académie des Sciences on Monday next. I left Swainson at work in the Musée, and went to the Louvre."

On Saturday, (September 6th,) Audubon records, "after our breakfast of figs and bread and butter, Swainson and I went down the Boulevard to the Jardins Royaux. * * * Evening coming on, we proceeded, after dressing, to Baron Cuvier's house to dine. We were announced by a servant in livery, and received by the Baron, who presented us to his only remaining daughter,—a small, well-made, good-looking lady, with sparkling black eyes, and extremely amiable." (The daughter mentioned by Audubon was not Cuvier's own, but his stepdaughter, Mademoiselle Duvaucel. His own daughter, Miss Clementine Cuvier, had died nearly a year ago, (September 28, 1827). In due time the Baroness "came in—a good-looking, motherly lady, and the company, amounting to sixteen, went to dinner."

"The Baroness led the way with a gentleman, and the Baron took in his daughter, but made friend Swainson and [Audubon] precede them; Swainson sat next Mademoiselle, who, fortunately for him, speaks excellent English." Audubon "was opposite to her, by the side of the Baron."

Audubon records "that there was not the show of opulence at this dinner that is seen in the same rank of life in England, no, not by far, but it was a good dinner served à la française. All seemed happy, and went on with more simplicity than in London. The dinner finished, the Baroness rose, and we all followed her into the library. I liked this much; I cannot bear the *drinking matches* of wine at the English tables." (Cuvier perfectly agreed with Audubon in dislike of the elaborate English dinners. In Mrs. Lee's language,* "the only thing to which M. Cuvier could not reconcile himself in England was the formality and length of our great dinners, the long sittings after which were always mentioned by him with an expression of ennuï, even in his countenance.")

After dinner, continues Audubon, "we had coffee, and the company increased rapidly; amongst them all I knew only Captain Parry, M. de Condolleot (?), and M. Lesson, just returned from a voyage round the world."

In fact, after the dinner there was the usual Saturday evening reception at Cuvier's, but

"Cuvier stuck to" Audubon and Swainson and all "talked ornithology". (Lesson, also a well known ornithologist, ought to have been one of the party.)

Cuvier, says Audubon, "asked me the price of my work, and I gave him a prospectus." As the evening advanced, "the company filled the room, it grew late," and Audubon and Swainson "left, well satisfied with the introductory step among les savans français."

Cuvier now knew about Audubon's work and noted, in the preface to the second edition of the *Règne Animal*, that "the work of M. Audubon upon the Birds of North America, which surpasses all others in magnificence, was unknown to me till after the whole of that part which treats of birds was printed."

The following Monday (September 8th) the travellers paid their "respects to Baron Cuvier" and an hour afterwards met him at the Académie Royale des Sciences. "The seance was opened by a tedious lecture on the vision of the mole; then Cuvier rose," says Audubon,† "announcing my friend Swainson and me and spoke of my work."

Swainson put in almost all of his available time in the examination of the birds, and was the recipient of "excessive liberality" from "Cuvier, Geoffroy St. Hilaire, and all those eminent men attached to the museum." "Dr. Isidore Geoffroy, in particular, gave up to [him] his own little study in the museum, in which [he] was permitted to remove every specimen from the gallery" he desired to examine.‡ Audubon says "young Geoffroy * * * gave me a room for Swainson and myself to write in and for the inspection of specimens."‡

Audubon was more catholic in his tastes and attentions than Swainson and his neglect of the stuffed birds aroused the surprise if not the contempt of Swainson. "It is singular," says Swainson,§ "how two minds possessing the same taste, can be so diversified as to differ *in toto* respecting the very same object. During the whole time of Mr. Audubon's residence in Paris, he only visited the ornithological gallery twice, (when I was studying for hours almost daily,) for the purpose of calling upon me; and even then he merely bestowed that sort of passing glance at the magnificent cases of birds, which a careless observer would do while sauntering in the room." But, although Swainson was so assiduous in his attendance at the museum, he did not give all the time to it.

One Wednesday afternoon, (September 10th,) an appointment was made by Audubon with "Monsieur L. C. Kiener, bird stuffer to the Prince of Massena (or Essling), who wished me," says Audubon, "to call on the Prince with him at two, the Prince being too ill to leave the house. Mr. and Mrs. Swainson were to go with me to see the collection he had made, of many curious and beautiful things, and when we reached the house we were shown at once to the museum, which surpassed in magnificence and

*Memoirs of Baron Cuvier, Harper ed., p. 24.

†Swainson, Taxidermy, &c., p. 349, 350.

‡Audubon, i, p. 313.

§Swainson's Taxidermy, &c., p. 117.

number of rare specimens of birds, shells, and books, all I have yet seen." (The birds of this collection long afterwards were purchased by Dr. Thomas Wilson for the Academy of Natural Science of Philadelphia, and now form part of the Academy's collection.) The next Saturday, Swainson and Audubon again went to Baron Cuvier's.

On Friday morning of the next week, (September 19th.) Swainson went with Audubon, whose company he had requested, to "complete a purchase of skins."

On the fourth week of their stay, Swainson and Audubon went "to the Panthéon to see if the interior corresponds with the magnificence of the exterior." They find that "it is fine, but still unfinished." Audubon at least thinks that "all, or almost all, the public edifices of Paris far surpass those of London."

In the fifth week, on Saturday, (October 4th.) Audubon "went with Swainson to the Jardin du Roi to interpret for him."

This is the last notice of the Swainsons' stay at Paris, and the next week they must have left. Audubon, however, remained till the beginning of October to secure subscribers to his great work. In this he was successful, obtaining "thirteen subscribers in Paris" after an expenditure of "two months" and "forty pounds."

Back again in England, on the 23rd of December Audubon records, "my friends the Swainsons have often been to see me."

Nothing further is recorded in Audubon's Journal of this, his first visit to England, and in the following spring, April 1, 1829, he sailed for America in the Columbia.

NEGOTIATIONS BETWEEN SWAINSON AND AUDUBON FOR CO-OPERATION.

But the next year (1830) there was correspondence between Audubon and Swainson respecting co-operation in the preparation for the press of the text of Audubon's work. Audubon was not a scientific or systematic ornithologist, and must have become cognizant of his deficiencies through his intercourse with other naturalists. Both men must have desired to come together. Swainson apparently, sometime before he met Audubon, had made a bid for the function by an eulogistic review contributed to the Magazine of Natural History (May, 1828,) entitled "Some account of the work now publishing by M. Audubon, entitled *The Birds of America*." He closed that notice with the statement: "I have no personal acquaintance with M. Audubon, I never even saw him. The copy of his work, which furnished these remarks, has been lent to me. These are vouchers of my sincerity and disinterestedness." Later they came together as recorded. Doubtless the two then felt for each other's views. But nothing was decided upon, or perhaps broached in a positive form.

Audubon returned to Britain in April, 1830, and in the fall was established in Edinburgh.

When still in Edinburgh, Audubon evidently wrote to Swainson, making certain propositions. What they were we do not know positively, but probably Audubon made known with sufficient clearness that he wished to have the co-operation of Swainson for a pecuniary compensation to be determined on, but did not want his name to appear as a co-author. We infer this from a letter of Swainson to Audubon in reply to one received from him. Swainson's letter is dated "Tettenhanger Green, 2d October, 1830," and has been published by Coues in *The Auk* for January, 1898, (p. 11-13). It will bear republication so here it is, with all the peculiarities of spelling, capitalization and punctuation reproduced from Coues' print, which, he assures us, is "printed literally and punctually true to the original in Swainson's handwriting."

"TETTENHANGER* GREEN.

2d October 1830.

"MY DEAR SIR

"I have refrained from replying to your letter until I thought you had returned to London.

"Either you do not appear to have understood the nature of my proposition on supplying scientific information for your work, or you are very erroneously informed on the manner in which such assistance is usually given. Dr Richardson, and a hundred others, similarly situated, might with equal justice say that no name should appear but their own; as it would rob them of their fame, because notes are furnished by one or two other persons, your friends would tell you, if you enquired of them, that even *my* name would *add* something to the value of '*The Birds of America*' You pay me compliments on my scientific knowledge, and wished you possessed a portion; & you liken the acquisition of such a portion to purchasing a sketch of an eminent painter—the simile is good. but allow me to ask you, whether, after procuring the sketch, you would mix it up with your own, and pass it off to your friends as your production? I cannot possibly suppose that such would be your duplicity and I therefore must not suppose that you intended I should give all the scientific information I have laboured to acquire during twenty years on ornithology—conceal my name,—and transfer my fame to your pages & to your reputation.

"Few have enjoyed the opportunity of benefiting by the advice and assistance of a scientific friend so much as yourself; and no one, I must be allowed to say, has evinced so little inclination to profit by it. When I call to mind the repeated offers I have made you to correct the nomenclature of your birds, from the first time of our acquaintance, and recollect the dislike you appeared to have to receiving any such information or correction, I cannot but feel perfect surprize at your now wishing to profit by that aid, you have hitherto been so indifferent about.

(*To be Continued.*)

*Tettenhanger is the word as spelled in Coues' article, but Tittenhanger is the one always used by Swainson; Coues probably mistook an i for an e.

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Comments.

THE AFFINITIES OF HESPERORNIS.

It is not often that we feel called upon to quarrel with any of the statements contained in the series of Contributions to the Osteology of Birds by Mr. W. P. Pycraft of the British Museum, but we do take exception to the statement in his paper on the Pygopodes that *Hesperornis* belongs to that sub-order. In the first place the long separate vomers and the freedom from one another of the bones composing the palatine portion of the skull are, not Ratite—but generalized characters shared with the Ostriches and a few other "left over" birds among existing forms and these are quite sufficient to exclude *Hesperornis* from the society of the grebes and loons. In the second place the shoulder girdle of *Hesperornis* is so unique and reptilian, with its free clavicles, united with one another by their larger ends, and articulating with the coracoids in a manner different from that found in any other known bird, that this character in itself is sufficient to keep their possessor out of the Pygopodes. Usually the clavicle

is one of the earliest bones to disappear in a degenerate shoulder girdle; Rhea has none, and Rhea has a good sized wing, but in *Hesperornis* the clavicle is complete and functional although nothing is left of the wing save the humerus. It has always seemed to us that too little attention has been given this feature of the big toothed bird.

Passing by the lack of union between ilium and ischium, (a generalized character,) it remains to be said that the pelvic girdle of *Hesperornis* exhibits a greater degree of specialization than that of any other bird. The great length of the pelvis, its great compression and the depth of the ilia are all modifications to adapt the bird for swimming. So, also, is the great development of the outer toe and the peg and socket articulations of its larger phalanges. All birds that swim with their feet alone, and are at all proficient in the art, such as the Grebes, Loons and Cormorants, have the outer toe well developed, a mechanical feature which lessens the tendency of the foot to turn the bird at each stroke. This feature is carried to the extreme in *Hesperornis* and, coupled with the narrowness of the pelvis, brings the center of effort of each foot stroke more nearly under the center of the body than in any other bird. In bipeds which run well, such as man and the Ostrich, it is the inner toe that carries the weight, and is most developed; hence the supposition that *Hesperornis* lost its wings on land and then took to water is quite untenable. The wings of *Hesperornis* were too large to be used under water, and hence they became atrophied through disuse. At least this seems to be a good working hypothesis and is supported by the fact that the flightless Cormorant of the Galapagos has very small wings while the pelvic girdle is more robust than in any other Cormorant, the nearest approach being Pallas' Cormorant which is said to have been flightless, although the degeneration of the wings is but slight.

The position of *Hesperornis* seems to us analogous to that of *Zenaidura*; the one is a highly specialized aquatic bird, and the other a highly modified aquatic mammal. The one is a branch of the stem from which the grebes may have been derived, the other a branch of the stem from which the cetaceans may have descended. But the one is not a grebe nor the other a cetacean, and neither has left any known successors.

F. A. L.

Letters.

NOTES ON A COLLECTING TRIP IN NORTHWEST NEBRASKA.

LINCOLN, NEB., June 30, 1900.

EDITOR OF THE OSPREY:

Two other Nebraska Ornithologists, J. C. Cranford and Merritt Carey, and myself spent the latter part of last May in Northwest Nebraska on a collecting trip for the State University. A number of interesting notes were secured. Two new birds were added to the state list, the Western Warbling and Plumbeous Vireos.

Two nests of Townsend's Solitaire were found. Both were found near the heads of canyons. The first was up the side of the canyon, about ten feet from the bed, and was in a cavity in the base of a pine tree, caused by the decay and burning. The male bird was first observed and was shot, then the female was seen close by in a pine tree; while the shells were being changed in the gun she disappeared. While looking for her I passed above the tree that the nest was in, and my foot displaced a stone that rolled past the tree, and out flew the bird. The nest, which was built of grass and pine needles loosely put together and held in shape by the hole it was placed in, only contained four badly incubated eggs.

The other nest found by J. C. Cranford was in another canyon on the side, above six feet from the bed under a small ledge of dirt in a shallow hole. The nest was more substantially built, but contained no eggs. A bull-snake that was killed near the nest, however, had all four eggs in him.

Lewis's Woodpeckers were found nesting, but no eggs were secured. One hole was in the top of a dead pine tree. Lower down in the tree was a Flicker's hole; still further down a Sparrow Hawk had its nest.

Harris' Woodpeckers were more abundant; two nests were found, but with very small sets, one with one addled, and two very badly incubated eggs; the other with four very badly incubated eggs.

White-throated Rock Swifts were found nesting behind ledges and in cracks in the most inaccessible cliffs.

On the same cliff with the latter a Kriders Hawk had its nest in a narrow ledge about one hundred feet from the house.

Audubon's Warblers were nesting, but we were too early for sets. J. S. HUNTER.

CASSIN ON BAIRD'S FIRST PAPER.

PHILADELPHIA, July 3, 1900.

EDITORS OF THE OSPREY:

I have recently, through the courtesy of Miss Lucy H. Baird, had the pleasure of looking over the early correspondence of her father, Prof. Spencer F. Baird. Among the many interesting manuscripts contained in this collection is a letter from John Cassin of July 5, 1843, which, so far as date is concerned, is peculiarly seasonable. I send it in time for the July OSPREY.

Baird had just submitted his first contribution to Cassin for publication in the Proceedings of the Philadelphia Academy, the paper comprising descriptions of the Least and Yellow-bellied Flycatchers. Cassin was eager to present it to the Academy as a necessary preliminary to publication, but owing to the fact that there was no quorum present, he was forced to hold it over. His apology to Baird is characteristic:

"Dear Baird:

"Dished! Last evening being the 4th of July the Academy of Natural Sciences of Philadelphia did not muster a quorum, the honorable members being as it would appear patriotic as well as scientific, were probably helping to celebrate the anniversary of the nation's birthday in a manner seeming to them right and proper, which was pretty enough in them, and to which course I have not the slightest objection excepting that I had not the pleasure of reading to them your paper."

Baird's paper was only delayed a week, however. The next Tuesday it was presented, it was ordered to be printed July 25th, and afterwards was published in the Proceedings (p. 283-285) under the title "Descriptions of two species, supposed to be new, of the genus *Tyrannula* Swainson, found in Cumberland County, Pennsylvania. By William M. & Spencer F. Baird, of Carlisle, Pa."

This was the first paper of the great ornithologist. He was then 20 years old. William M. was his brother, 6 years older than himself, who likewise was early devoted to ornithology, but diverted by business interests from pursuing it much further.

The two species still stand as *Empidonax flaviventris* and *E. minimus*.

WITMER STONE.

Notes.

PROTECTION AND IMPORTATION OF BIRDS under act of Congress, approved May, 25, 1900, is the title of circular No. 29 just published by the U. S. Department of Agriculture. It contains the regulations for carrying out the provisions of the "Lacey Act" for the preservation, distribution, introduction and restoration of game and other birds under the Department.

AN INTERNATIONAL AGREEMENT FOR THE PROTECTION OF GAME ANIMALS has been attempted. "Representatives of the European powers

having territorial possessions in South Africa—Great Britain, Germany, Spain, Belgium, France, and Italy—have just held in London a conference, the interesting, if not particularly important object of which was to devise means for protecting the "big game" of the Dark Continent from the speedy extermination threatening it. The delegates included diplomats, explorers, naturalists, and sportsmen of note, and they found no difficulty in arriving at an agreement as to what ought to be done, but it was a difficult matter when it came to arranging for

the enforcement of protective rules in a region like Central Africa. Still the conference accomplished a good deal, the most promising action taken, perhaps, being the establishment of a zone extending from Timbuctoo to the Zambesi, and from sea to sea, within which all the powers concerned promised to do what they could toward stopping the reckless slaughter of animals, and especially of elephants, that is now going on. As foundation for these efforts the fauna of the district was divided into classes ranging from creatures which, on account of their utility as scavengers, their defenselessness, or their scarcity, are not to be killed at all if it can be prevented, through those of particular commercial or food value, of which the females and immature males are not to be hunted, to a few dangerous or destructive species, which may be shot without restriction. As the most effective means of protecting the elephants, it was suggested to confiscate at the coast shipping points all tusks weighing less than five kilograms, but justifiable doubt was expressed as to the practicability of a measure so drastic as this. The meeting has been much discussed in the English and Continental press, and everybody agrees that its objects were admirable, but the chances are that the advance of civilization in South Africa will, as elsewhere, be fatal to wild beasts and wild men. This world is too small for them nowadays."—*Exchange*.

A PROPOSITION OF THE MILLINERY MERCHANTS' PROTECTIVE ASSOCIATION OF AMERICA has been made to the various Audubon Societies to cease killing or buying any North American birds, except such as are edible and killed in season, if the societies will undertake not to interfere with the use of those birds or with skins imported from other countries.

"THE LARGEST BIRD CAGE EVER BUILT" has been completed for the Zoological Garden of New York. It is 170 feet long, 72 feet wide, and 75 feet high. The inclosing material is one and a half inch mesh wire. There are now about 80 birds in it, but it is proposed to keep about 250 in it.

A NEW SPECIES OF PETREL AND A NEW GULL have been discovered in the Hawaiian Island of Kauai.

THE GREATEST PRICE FOR A GREAT AUK'S EGG was realized at a sale in June, at Stevens's auction rooms in London. 315 guineas was the price paid for what has been described as "the finest specimen known of a special type of marking." The highest sum previously obtained had been 300 guineas. Another egg sold on the same day realized only 180 guineas.

FEARLESSNESS OF SWALLOWS has been noticed in *The Spectator* by Mary Hermione Dawkins. "It is possible that the following facts may interest the bird-loving readers of the *Spectator*. Last year, at my country place—Wilcote, in Oxfordshire—a pair of Swallows made their nest against the curtain-pole in my housemaid's bedroom. It is a room always occupied by her, and in and out of which the other housemaids

constantly go and come. The birds reared seven young ones, and they used to sit in a row on the picture frames, and on the screens close to the housemaid's bed and work-table, twittering. Just before they migrated, they flew in two or three times, but used to sit in a row on the roof close by, and no longer roosted on the curtain-pole. I am happy to say that this year the pair returned, began busily repairing their old nest, and were absolutely fearless."

A RUSTY GRACKLE (*Scolecophagus carolinus*) KILLED NEAR CARDIFF, WALES, October 4th, 1881, has been portrayed in a photographic plate in the "Report and Transactions, vol. xxxi." of the Cardiff Naturalists' Society. The specimen is in the Cardiff Museum. "It was brought to Mr. Drane in the flesh the same day it was shot" and "its plumage was in perfect condition, and showed no sign of confinement in a cage".

VOCAL IMITATION BY THE BLACKBIRD of England, closely related to the American Robin, has been recorded by Mr. J. A. Fry, in *The Spectator*. "A Blackbird of Upton Village, Berkshire, has given evidence of a quality supposed to belong only to the caged and trained one,—the faculty of imitation of other songs and sounds than its own; and as such an accomplishment must be of interest to the naturalist, perhaps the *Spectator* would not think its narrative unworthy of its pages. A Blackbird native of the place has surprised us lately by adding to his song, and with much apparent self-satisfaction, four notes from the song, "Merrily Danced the Quaker's Wife," always the same and broken off abruptly, and this copied from a captive parakeet in a neighbor's garden, hung outside for its health and pleasure, and trained in its own art of imitation and constantly exercising its acquisition, but renouncing it immediately upon perception of the theft. The special interest in this is that it is voluntary acquisition; no training, no teaching, no capture, no dark cage, but a wild Blackbird following its own pleasure, and suggesting faculty in the bird beyond what has been attributed to it, and of necessity interesting to the naturalist or lover of birds, their songs, and their ways".

COLONIZATION OF CROWS IN WASHINGTON, D. C., has been greater this year than ever before—in late years at least. They have nested in various public parks, especially the Smithsonian grounds and Lafayette square. The latter, faced by the Presidential mansion on the south side and the residence of the Secretary of State (Mr. Hay) on the north, is an assembly place of the Crows in the morning, and their early cawing has been so offensive that the aid of the police authorities has been invoked to abate the nuisance. The birds are Fish-crows.

THE NEW BIRD OF PARADISE referred to in the OSPREY for May has been described by Mr. Kolla P. Currie in the Proceedings of the U. S. National Museum (xxii. 497-499, pl. 17) under the name *Cicinnurus lyogyrus* or Crimson Bird of

Paradise. It contrasts with the only other species of the genus in the following characters.

C. lyogyrus.

Pectoral shield nearly as long as broad.

Frontal plumes short, not obscuring contour of head, not reaching beyond middle of bill.

Tail emarginate.

Central tail-shafts crossed near base, diverging before tips.

Outer web at tips of central tail-shafts loosely coiled; greatest width, 8 mm., uniform for greater portion of length.

C. regius.

Pectoral shield one-fourth as long as broad.

Frontal plumes long, obscuring contour of head, reaching forward beyond middle of bill.

Tail rounded.

Central tail-shafts crossed near base, covering before tips.

Outer web at tips of central tail-shafts tightly coiled, discoid; greatest width, 12 mm., rapidly narrowing to tip.

The provenance of the new species is entirely unknown; it probably inhabits some little explored part of New Guinea or a satellite island.

A MONUMENT TO PROFESSOR SPENCER F. BAIRD was "resolved" as "desirable" by the American Fisheries Society at their late annual meeting held at Woods Holl, July 18-20. "The society deems it appropriate that this memorial should be located at Woods Holl, as a special tribute to his zeal in furthering the interests of marine biology and fish-culture," and "resolved, that a committee with full powers be appointed by the chair to determine the most suitable form of the memorial, to raise the necessary funds, and to proceed with the erection of the monument." A committee of ten was appointed with Dr. Hugh M. Smith of Washington as chairman.

Literature.

BIRD STUDIES WITH A CAMERA. With introductory chapters on the outfit and methods of the bird photographer. By Frank M. Chapman. New York. D. Appleton & Co. 1900. [12mo. pp. 1-218—cloth \$1.75].

In this neat little volume, Mr. Chapman gives us his varied experiences with cameras in the field. The 110 beautiful photographic reproductions, to say nothing of the artistic vignettes beginning the various chapters, speak loudly for the author's patience and skill, and proclaim a wonderful success to his manipulation of the camera.

Passing a very interesting preface and introduction, the reader is brought face to face with "The Outfit and Methods of the Bird Photographer." Here Mr. Chapman gives us the benefit of his experience with cameras, and tells us which are available for the purpose, setting forth the special qualities of the divers instruments, lenses, shutters, tripods, plates, blinds and sundries; happily demonstrating that it is not necessary to employ an expensive instrument, but that equally good results may be achieved with one of moderate cost. The next chapter is devoted to "The Methods of the Bird Photographer". In it the bird photographer will find many hints how to take pictures of the haunts of birds at the various seasons, of their nests and eggs, of their young, and finally of the most difficult subjects, the adult birds themselves.

In the second part, "Bird Studies with a Camera," the author in ten chapters takes us on his various expeditions and shows us in every case what part the camera played in each. In "Bird Photography Begins at Home" he has enlisted the birds which frequent suburban homes as subjects for his illustrations. The second chapter "The Chickadee: a Study in Black and White," is a most delightful treatise, and the seven pictures which accompany it are of rare beauty. "The Least Bittern and some other Reed Inhabitants," transports us to the

marshy haunts frequented by this species, the picture of the four young Red-winged Black-birds with their hungry faces being especially pleasing. "Two Herons" shows us the habits and nests, with their divers contents, of a Black-crowned Night Heron Colony and the Home of Great Blue Heron while the next chapter leads us to "Where Swallows Roost," in the Hackensack marshes of Northern New Jersey. Then we spend "Two Days with the Terus," on the Weepeekets, in Buzzards Bay; at least we imagine we do, for the pictures which accompany this sketch bring the scenes wonderfully close to us. We only wish that the women who have been guilty of wearing the mangled remains of these beautiful birds might see the pictures of these lovely forms and note their home life as here represented; we feel assured that they would become converts and cease wearing such grim trophies of barbarism. The next three chapters are devoted to "The Bird-rocks of the Gulf of St. Lawrence," and we visit in turn "Percè and Bonaventure," "The Magdalén," and "Bird-rock" proper. The last without doubt is the most interesting chapter in the whole book and the plate (85), showing Kittiwakes, alone would seem to be a sufficient reward for a trip to the island. But there are so many others, all of which illustrate certain features of the island and its inhabitants, that we may well deem this chapter the most important illustrated article which has ever been published on East North American Sea-bird life. The last chapter is devoted to "Life on Pelican Island, with some Speculations on the Origin of Bird Migration." Here again the views which the camera has presented for our perusal are most perfect, and the series a complete one, showing pelican life from its infancy to its grave.

All these pictures are connected with sketches written in the delightful style of the author, thus making it not only a book of pictures, but one relating stories of pleasant hours well spent.

B.

THE GAME BIRDS AND WILD FOWL OF THE BRITISH ISLANDS. By Charles Dixon. Second edition, enlarged and thoroughly revised by the author. Springfield: Pauson & Brailsford. 1900. [4to, xxviii + 476 p., 41 col. pl.]

The first edition of Mr. Dixon's work was published in 1893, and since then, as the author says, "our knowledge of various species has been considerably increased." The new edition has, in fact, been quite recast and is essentially a new work. The new illustrations are in the form of colored plates, and the 56 birds illustrated are introduced in 41 plates prepared by the author's "friend, Mr. Charles Whympers." The descriptive matter under each species is distributed under five categories—Geographical distribution, Allied forms, Habits, Nidification, and Diagnostic characters. This is quite well brought up to date. The coloring is often too much exaggerated or falsely toned. On the whole, however, the work will be useful to a large class of readers.

THE WILSON BULLETIN. No. 31. . . A Monograph of the Flicker (*Colaptes auratus*).—By Frank L. Burns. . . Oberlin, Ohio, April, 1900. [8vo. t. + 82 p. + i l.—50 cents.]

This is scarcely a monograph inasmuch as no description of the bird itself is given, and the knowledge of its distinctive characters is assumed. It is, however, to a considerable extent a monograph of the biology (or rather ecology) of the species based on original observations of the author or his friends. Very few references are made to the observations of others. These ecological data are given under a number of

heads and the enumeration of these may be compared with those given by Mr. E. Seton Thompson and Dr. Gill (OSPREY for September, 1899, and February, 1899).

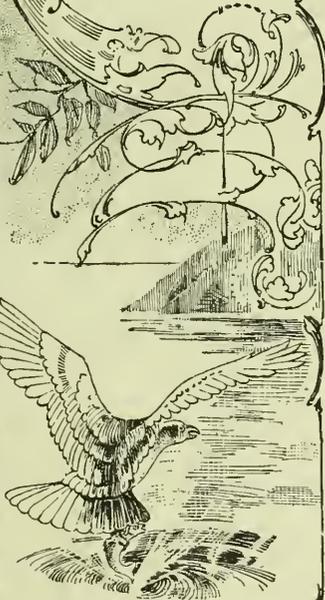
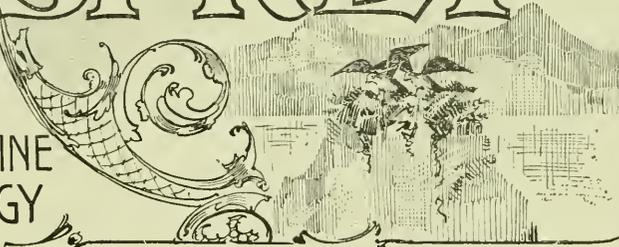
After the Introduction and Synonyms are considered the Geographical Distribution, Migration, Flight, Roosting, Drum Calls, Voice, Mating, Nidification, Position, Excavation, Eggs, Incubation, Young, Molt and Renewal, Food, Enemies, Measurements, Plumage, Hybridism, and Atavism. The monograph ends with the "conclusion" that the bird's assumed very material "advantages over all other members of the tribe inhabiting the same regions would tend to its preservation, increase and comfort when the less versatile or adaptive species decrease or become extinct under changed conditions."

The list of vernacular "synonyms" is a very large one, covering 8 pages, and embracing no less than 122 variations. Most of these, however, are very local or very slight orthographical (or cacographical) variants.

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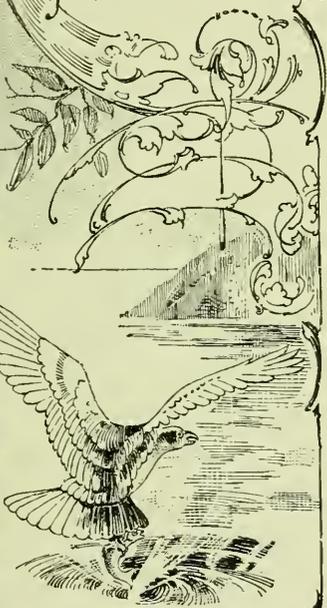
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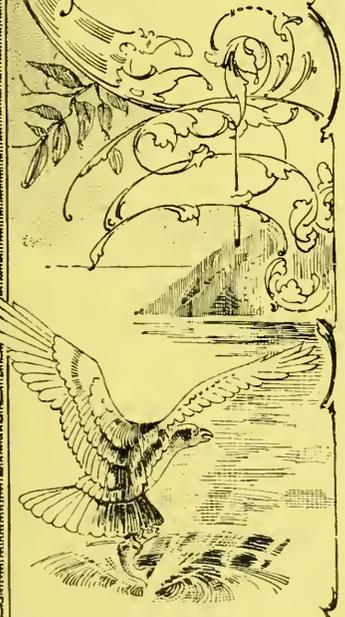
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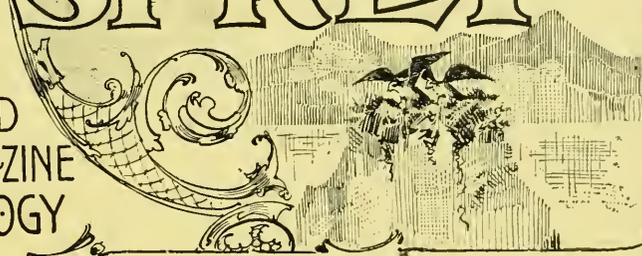
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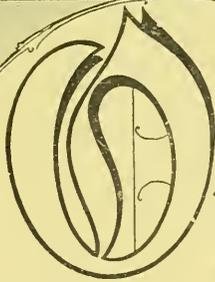
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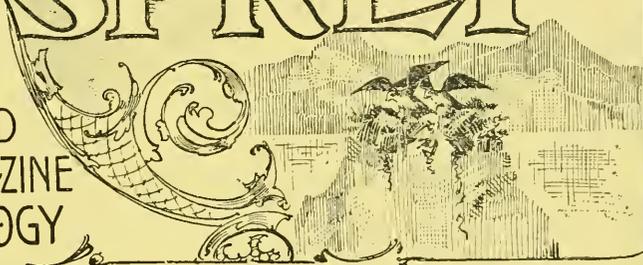
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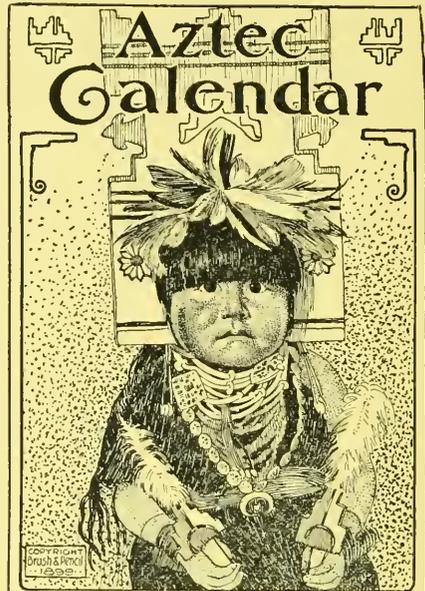
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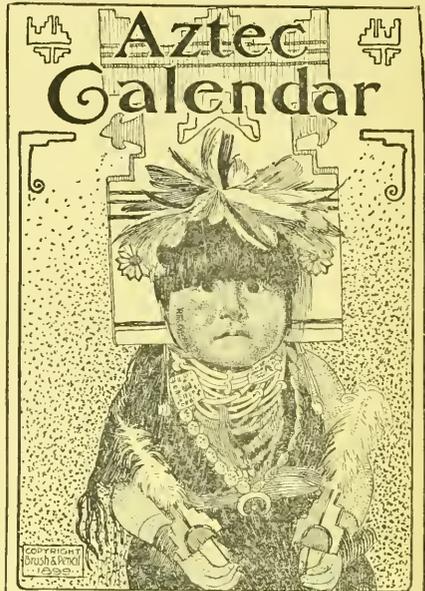
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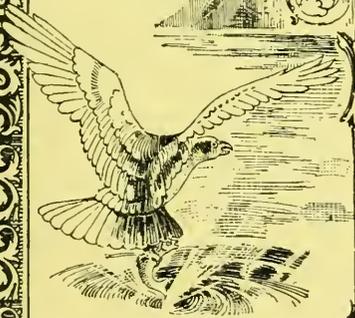
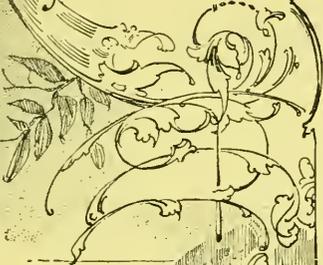
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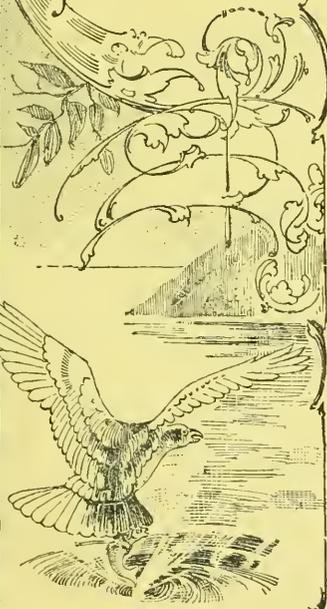
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