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THE OSPREY.

AN ILLUSTRATED

MONTHLY MAGAZINE OF POPULAR ORNITHOLOGY.

VOLUME V.

SEPTEMBER, 1900, TO DECEMBER, 1901, (INCLUSIVE).



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PREFACE.

The fifth volume of *THE OSPREY* has been finished, and with it a well rounded period of five years—a lustrum—has been completed. Maturity has been attained, and the desire to throw off the old plumage and to take on a new one, which has been felt for a long time, may now be fitly realized. A moult is seasonable. With the present volume a first series of the magazine is brought to an end. A new one will follow.

The interest in the Journal was purchased by one of the managing editors at the instance of the late Doctor Coues after the first number of a third volume had been already issued. Various causes later entailed upon the purchaser the necessity of either abandoning it or continuing it under other auspices. The latter seemed to him to be the lesser of two evils, and he was fain to edit it himself with the assistance of the ablest of the ornithologists resident at Washington. Under such conditions the last two of the volumes have been published.

The style and typography adopted by the original editor was continued, but with some essential modifications, by Doctor Coues. Those modifications were introduced into the second number of the third volume.

A dislike to depart abruptly from a standard once adopted, influenced the succeeding editors in preserving, for the time being, the system as left by Doctor Coues. They were determined, however, at the end of a definite period, to assume a new dress and apply new methods. The time has now come.

The new series will be entitled as the old, but numbered as "second series, volume one" and so on; the numeration will be also continued from the first, however, and volume one will thus be "volume six of the complete series", etc. The text will be in large type (Small Pica or 11-point instead of Brevier or 10-point) and the numbers will consist of 24 in place of 16 pages, or the equivalents as plates, two pages being represented by one plate. The proportion of body and supplement will vary; sometimes 4 or 8 pages of the latter will be given with 16 or 20 pages of the former, and sometimes these proportions will be reversed.

The "Life and Times of William Swainson" is concluded in this volume. Originally it was intended to be completed in four numbers of *THE OSPREY*, but friends, in whose judgment the author and editors feel confidence, expressed approbation of the mode of treatment and urged that the life be made the medium of much interesting and important information respecting the conditions of science and "philosophy" in the time covered. The biography consequently was extended and has become, to some extent, the history of a peculiar and interesting stage of science prevalent in the third and fourth decades of the past century. For a time, the ideas characteristic of that stage were dominant, and those who shared them looked down with scorn upon the humbler students who were content to deal with facts and with contempt upon poor anatomists, who were scarcely deemed entitled to be called zoologists! It is interesting to turn back and view, through the long vista of past years, the contrast between the approved ornithology of that time and the work done then and before that time by ornithotomists. The latter were not recognized as true ornithologists and were completely ignored by those who usurped the right to be exclusively so called. But those ornithotomists were laying the foundation stones of what is now recognized as the science of ornithology and the philosophy then regnant has long since been discarded.

For over two years, the editors have had in hand engraved portraits of a number of naturalists prominent in American ornithology as well as sketches of their lives. It was deemed inadvisable, however, to give undue prominence to biography and consequently that material has been held back until the *Life of Swainson* was finished. The time has now come to utilize the matter and the first of the lot will be published in the initial number of the new series of *THE OSPREY*.

It was, for a long time, hoped that a serial work on American Birds could be issued as a supplement to *THE OSPREY*, but the attempts to organize the force to undertake such a work on a uniform plan were unsuccessful. For the present, therefore, the editors are compelled to suspend the attempt. Meanwhile they will issue, as a supplement, signatures of a new work on general

ornithology. This will be brought fully up to date. The wants of the American reader will be especially considered, and more attention will be paid, in proportion, to American forms than to others. Those of other lands, the Hawaiian Islands, the Philippine Islands, and Australia will also be given a prominent place. There are so many works on European Birds readily accessible that less attention need be given to them than to the others, but they will by no means be neglected. One or two plates will be issued with each number but, as in the case of such works generally, will not correspond with the text of the number in which they appear. Instructions for arrangement and binding will be given with the final number.

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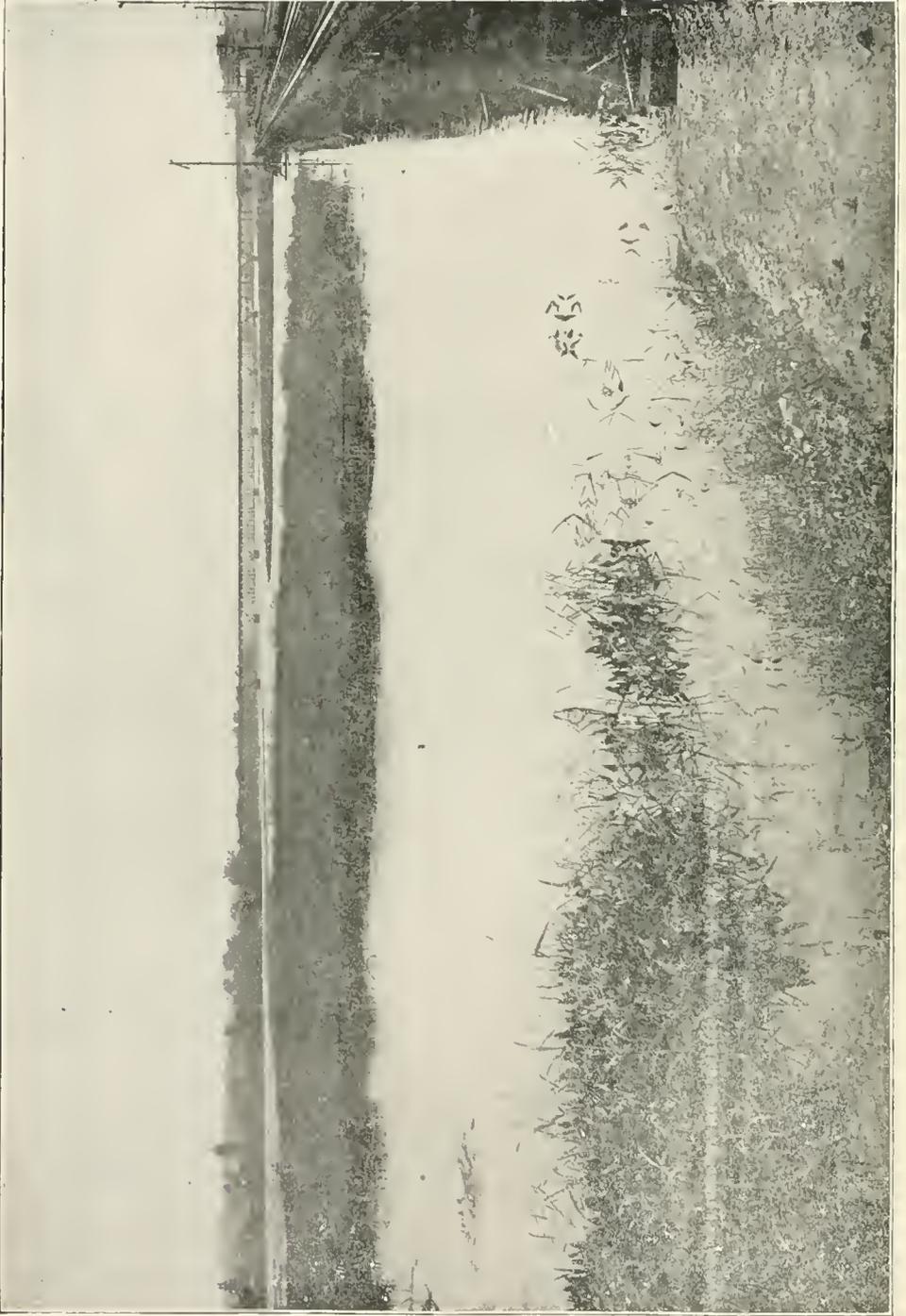
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THE MARSH. (Photographed by Bartsch.)

THE OSPREY.

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Published Monthly.

VOLUME V.

SEPTEMBER AND OCTOBER, 1900.

NUMBER 1.

Original Articles.

BIRDS OF THE ROAD.—VIII. AUGUST AND SEPTEMBER.

By PAUL BARTSCH, Washington, D. C.

For some time *Zizania* has been waving its graceful heads with the ripening seeds, most invitingly in the breeze, and the English Sparrows and Red-wings have been feasting and lately too the metallic chink, chink, chink of the Bobolink, who is now travelling as Mr. Reed Bird, has been wafted to us, as we have traversed the neighborhood of the marsh. Chink, chink, chink, day by day they have been coming to feast and fatten on the table spread for them and with them came the 22nd of August, a day of happiness to the sportman and ore of misery, pain and death to the unsuspecting little fellows, who but yesterday enjoyed the grain in happy, happy revelry.



THE BOBOLINK.

August the 22nd is the sportsman's day in the District of Columbia; on this day the law permits him to lawfully pursue the birds of the marsh and wage unrelenting war upon the Reed Bird and the Sora and anything having wings and feathers naturally falls under these two categories.

The marshes about the District, enumerated according to size and extent, cover: 1st. the East-

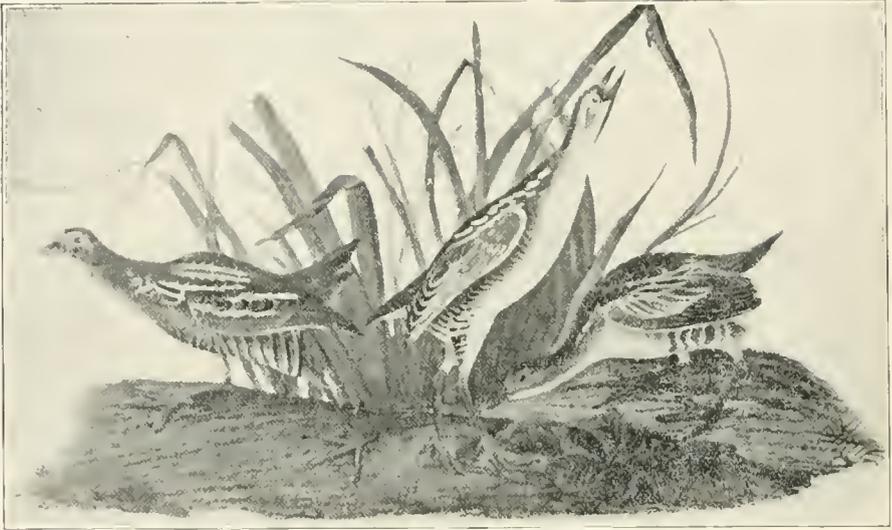
ern Branch region, extending from the Anacostia Bridge to about a half mile north of Benning's; 2nd. the Virginia shore of the Potomac, extending from Analostan Island to within one mile of Long Bridge; 3rd. Roches Inlet which leads to quite an expanse of marsh at its head, and lastly, Four Mile Run, Va.

The frontispiece gives a view of Eastern Branch looking south from the B. & P. R. R. Bridge, showing the New Bridge in the distance and a large piece of marsh between the two.

Not being sportsmanly inclined, I had forgotten the change made in the game laws, which has precipitated the killing from the 1st of September to the 22nd of August; I was therefore somewhat surprised when long before light had proclaimed the presence of another day, I was awakened by the muffled reports of guns which have not improperly been designated as the firing of a skirmish line. Being on leave I decided to witness this day of all days on the marsh.

All the skiffs were out,—that is, the little crafts which the man after Sora engages, and it was just as well for us, for we were only spectators and could do just as well observing from our broad flat-bottomed boat as the man in the frail little craft whose greatest breadth is scarce three feet in its widest part, while its bottom rarely exceeds two. These little boats are doubled-bowed, usually sixteen feet in length, and from ten inches to a foot in depth, have a single seat a little in front of the centre, and usually an air-tight compartment at each end. They are propelled by a pole, or paddle. The pole is widely forked at the end and some fifteen feet in length, and it is remarkable how wonderfully the little craft can be wielded through and over in and out among the dense tall reeds by its use in adept hands.

The marsh was alive with crafts of all kinds, plying through the tangle and maze of *Zizania*, lily-pads and the host of other marsh-loving plants, and bang, bang rang the guns continually. All were after Rail or Ortolan, but most



THE SORA. (From Audubon.)

of them killed Reed Birds, English Sparrows and Red-wings. Yea, one boat even boasted of a number of young Black Terns.

It was interesting to see the tiny skiffs ply through the tall wild rice. The tide was high, and every part was accessible to the man with the skiff, pole and brawn. Along the shore, and among the nearer reed-beds, waded, struggled and plunged the muddy and bedraggled urchin, the negro, and the poor class of sportsmen who could not afford to rent a boat, but had money to feed their noisy musket with its charge of powder and shot. Bang, bang, bang, all morning went the guns, and the frightened Reed Birds could be seen, passing from one patch of reeds to another, only to be frightened on by the discharge of another fowling piece. Now and then a Sora would wing its sluggish flight from some clump of weeds from which it had been frightened, only to fall a victim to a charge of shot.

By far the greatest number of gunners frequented the marsh between the B. & P. R. R. Bridge and Bennings. In fact so many were present here, that it seemed as though naught could escape the mass of shooting humanity.

Drs. Cones and Prentiss, in the *Avifauna Columbiana*, describe a day at Rail shooting. It pictures the hunt of the day, as well as it did that of twenty years ago. I cannot do better than to echo it in part, that the vicissitudes of our marsh birds, may be known from the mouths of such eminent authorities as these.

"If any interested reader wishes to get a good days Rail shooting in the District of Columbia, let him make his arrangements to try it upon the 1st of September. On this day the law protecting the birds expires; up to this time they have not been disturbed, and are consequently very abundant upon the open marshes. Wait for one week and it will be as difficult to secure

one dozen birds, as it is on September 1 to bag ten dozen. The boat and pusher must be engaged a week or two before the appointed time."

* * * * *

"The boat which is used in Rail shooting is of peculiar construction, and especially adapted to forcing a way through the tangled reeds. In local vernacular it is a 'skiff', and is a ticklish-looking affair for two men to navigate in standing up. And indeed it is a ticklish affair, as the greenhorn will be likely to learn in his first attempt at Rail shooting." * * *

"In getting into one of these little crafts for the first time the sensation is one of insecurity, and the feeling is well expressed by the phrase in common use, that "you must part your hair in the middle" to avoid an upset. The sportsman gets in first and sits upon the middle seat, with his guns and ammunition in front of him. He should have two guns and not less than 300 loaded shells; two guns, to change when one becomes too hot to handle.

* * * * *

"When the birds have not been much disturbed they will be found feeding all over the marsh; and as the centres are more easily accessible to the boat these are first gone over, and as many birds secured as possible. This drives them to such shelter as they can find in thick patches of tall reeds and tangled saw-grass and wanquapins usually found along the edges of the river and of the guts. These covers must then be beaten as the tide begins to fall. The boat is run along the edges and the reeds beaten with a pole, by which means many birds are frightened into taking flight and secured.

So they go, gliding through the marsh, and the birds begin to rise. Now both the pusher and the shooter have all they can attend to. Birds rise in front, to the right, to the left,

behind; the greenhorn becomes excited, confused; doesn't know which to shoot at; fires almost at random; misses oftener than he hits; swears at his gun, at his shells, at the unfortunate pusher, at everything but himself, who alone is at fault, and not unlikely tumbles overboard. If he is of the right mettle, however, he soon settles down to work, deliberately picks his bird each time, and then there is but little more missing.

Sometimes birds will get up behind him and out of the range of his vision. The pusher cries "Mark" when he wheels and fires. Nor has the pusher a sinecure; he advances, stops for a loading, goes forward, backwards, zigzagging, retrieving the game; and so it continues until the retreating tide forces the skiff from the marsh."

With the outgoing tide the sound of discharges diminished more and more, and there was quite a lull when ebb had reached its lowest mark.

Swallows of divers kinds were now gracefully skimming over the stream, and the extensive wild rice flats. They had returned to their favorite hunting grounds from which they had been frightened by the incessant firing. What a different picture these winged, peacefully gliding denizens of the air presented from the fretted, frightened, calling, rest and peace seeking birds of the morning.

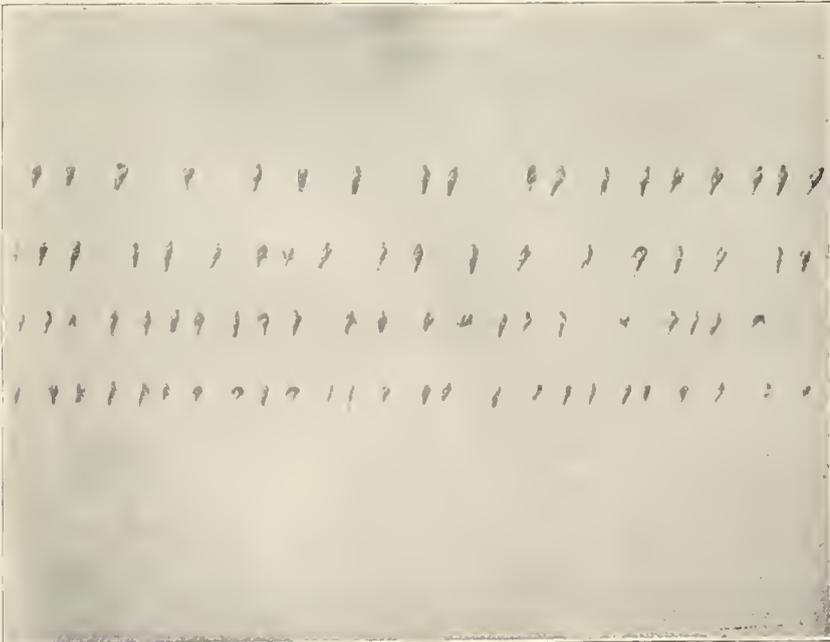
If some of the men who carried away among their bag, some of their little forms that day as mangled corpses, which they, no doubt, termed meat, had studied the birds a little more closely, and had tried to gain an insight into their

domestic affairs, I think they would, like myself, perchance, have exchanged the gun for a camera and carried home some scenes of wild life, much more pleasing and interesting than the remains of the feathered bits of life, which furnished them with just one small morsel, a single mouthful, at the price of a happy joyous life.

Here and there a Maryland Yellow-throat was sneaking among the weeds or a curious Marsh Wren who has escaped being shot, peered inquiringly at us as we glided by, wondering very likely what all this hubbub was about. The Red-wings, Bobolinks and English Sparrows had had their lesson and heeded it. They kept their distance admirably well. There was no approaching them now, and I hope they will transmit the lesson to their offspring if they live to have them.

At the railroad bridge we were pleasantly surprised! Whole strings of swallows had come to rest for a pace, from the chase. Hundreds of Bank Swallows, with a fair sprinkling of White-bellied, Rough-winged, and the beautiful, ever graceful Barn Swallows were seated side by side as our picture will show.

We watched the Bank Swallows all summer. We greeted them on their arrival in spring and were happy to view them busily engaged in digging their homes into the rain-stained clay bank. Each day when the setting sun heralded the evening hour, we were pleased to see their fairy forms glide swiftly o'er the waters, dropping ever and anon to touch their dainty breasts against its calm cool surface and, rising shake themselves, and dip, and dip again.



BANK SWALLOWS. (Photographed by Bartsch.)

We were happy when the colony appeared larger for then we knew, that the oft returning birds were bringing food to the chattering young which soon showed their faces at the burrow's mouth. Then came the glorious time of the first flight of the first short anxious distance covered. Then the trip to the wires from which post all future lessons were taught by example. All these and many other interesting points would they have noted, had they only been willing to observe.

Another pretty picture greeted our eyes a little below the New Bridge. Here a pair of Pied-billed Grebes better known as Hell-divers were sporting themselves upon a mass of floating Ceratophyllum from which they glided gently beneath the surface and deftly evaded all our attempts to get a picture of them. Little use it would be to expose a plate at the bill of a Grebe, particularly if that was a hundred feet or more distant. Rarely ever did they project their necks above the surface when within gun range. These birds possess the power of raising and sinking their bodies to a most wonderful degree. This changing of specific gravity is a gift possessed by all of the divers, and in a lesser degree by many of the other water fowls.

Another lovely picture which our camera failed to record was a Kingfisher poised some twenty feet above the surface of the water, perfectly stationary, his wings rapidly fanning the air as he surveyed the liquid medium beneath him. He had evidently espied some small fish as he was passing, and was now poising for for a strike. Swift as a flash he dropped down, diving beneath the surface, reappearings hortly with his catch firmly held in his long, strong bill. He bore his prey to a low dead willow limb on shore, where we carefully stalked him to take a snap which resulted in a tiny image of the bird upon our plate. Several Green Herons were feeding along shore and retreated hastily to the dense willow cover as we silently approached too near to suit their fancy.

Three other birds deserve a mention before we leave the marsh. The Osprey—two of which were seen sailing grandly about the open waters, in spite of all the din and noise, now and then stopping, poising for a moment and plunging into the waters, sending it in a merry spray from

their quivering pinions as they emerge from the sparkling deep.

The Osprey does not shift its center of gravity when it poises above the water as does the Kingfisher, whose body changes almost to a vertical from the horizontal position as he prepare for a plunge. Neither does the Osprey dive headfirst as does the Kingfisher; but he plunges into the water with wings extended widely upward; clutching his prey with his powerful outstretched talons. Twice this day did I have a chance to snap my camera at the Osprey as he emerged, each time with a small catfish; but only one of my pictures shows the bird, and that, decidedly in miniature. It may seem strange, but every fish which I have seen the Osprey catch about Washington, and have been close enough to determine has proved to be catfish. I have several times surprised the bird into dropping his prey by approaching the spot where he was enjoying his catch unobserved, and each time have found it to be a catfish. In the Mississippi Valley I found him less exacting as far as food was concerned, for there, I have often noticed one seeking a dead limb with a small water-snake in its talons.

As evening drew near, and the many pretty dragon-flies which had been whirring about the reeds were each seeking a resting place for the night, just before the Night Hawk and Bats were leaving their retreat to hunt the marsh, a Great Blue Heron dropped in, and with calm and measured strides beat back and forth in the shallow water, now and then unlimbering his graceful position long enough to inspect some near by object and perchance make a few vicious stabs at some luckless bit of animation which he called his game, only to resume his majestic strides a moment after. Night Herons, single, in pairs or threes, were directing their flight to different parts of the marsh; all were coming from a northeasterly direction. I have been watching this Night Heron flight for several years, and strongly suspect a roosting place of these most beautiful birds, perhaps even within the bounds of the District, and shall inquire into it a little more closely when autumn frosts will have robbed our trees of their foliage, and perhaps another year may furnish a set of photos and facts concerning the home-life of *Nycticorax nycticorax nevius*.

IDLE HOURS AT IDLEWILD

OR OBSERVATIONS IN CENTRAL MONTEREY COUNTY.

BY MILTON S. RAY.

I had the good fortune to spend two weeks in June, (1900,) among the redwoods near the mouth of the Little Sur River in central Monterey County. The country is very rough and mountainous, and the timber (principally redwood, alder, laurel, madrone, sycamore, live and tan-bark oak) is chiefly confined to the river bottoms and a short distance up the adjacent hillsides. Above this is a rocky area covered with sagebrush and chamisal.

For several miles along the river birds of mountain and valley intergrade. I frequently

noticed the California Jay (*Aphelocoma californica*) and Blue-fronted Jay (*Cyanocitta stelleri frontalis*), and also the California Partridge (*Lophortyx californica*) and Plume Mountain Partridge (*Oreortyx pictus plumiferus*) in the same locality. It is claimed that the last is not found below an altitude of 4,000 feet, yet two miles from the ocean along the North Fork I noticed a number of them, and found some egg shells in the sage-brush above the river. Of all the birds the noisy Blue-fronted Jay was the commonest. On June 13th, while fishing on the

pond near by a pair of ducks (*Anas boschas?*) South Fork two miles above camp. I noticed a nest in a laurel about thirty feet above the river. Approaching, the parent quietly stole off the nest and disappeared in the heavy timber. It was placed far out on the end of a branch, and was composed of twigs, mud and moss, and lined with fine rootlets. Although this was a very late date, it contained no eggs.

One morning a trip was taken down the river to the mouth, along the ocean shore to the Big Sur River, returning to camp by a mountain road. On leaving camp we were greeted with the loud chatter of the Blue-fronted Jay, California Creepers (*Certhia familiaris occidentalis*), and California Chickadees (*Parus rufescens neglectus*) were quietly searching the branches for their breakfast of larvae and insects, and from a dead twig Vigor's Wren (*Thryothorus bewickii spilurus*) gave forth a burst of melody. California Woodpeckers (*Melanerpes formicivorus bairdi*) are crying from the dead treetops, and occasionally in the tall redwoods a Band-tailed Pigeon (*Columba fasciata*) was seen high above the forest giants; soaring in graceful circles, was a pair of Western Red-tails (*Buteo borealis calurus*), and ever and anon came their loud cry keah. Continuing along the river, we saw a Western Wood Pewee (*Contopus richardsoni*) at his post in an alder and Towhees (both *Pipilo maculatus megalonyx* and *Pipilo fuscus crissalis*) scudded to the brush. A Red-shafted Flicker (*Colaptes cafer*) left a dead sycamore, and the nest fifteen feet up contained five fresh eggs, and, curiously enough, on the other side of the tree, in the softer decayed wood was a nest of the California Chickadee with four young. Passing a deserted cabin, a Black Pewee (*Sayornis nigricans*) announced his presence by a feeble "pewet" and a bob of the tail, and in one of the rooms, plastered against the wall, was the nest, and four large young. The only trees now besides the thick brush were the alder, willow and scrub-oak.

Black-headed Grosbeaks (*Habia melanocephala*), Russet-backed Thrushes (*Hylocichla ustulata*), Yellow Warblers (*Dendroica aestiva*), Pileated Warblers (*Wilsonia pusilla pileolata*), California Bush-tits (*Psaltriparus minimus californicus*), Mourning Doves (*Zenaidura macroura*), Song Sparrows (*Melospiza fasciata?*) and Parkman's Wren (*Troglodytes aedon parkmanii*) were abundant, and an occasional Belted Kingfisher (*Ceryle alcyon*), Roadrunner (*Geococcyx californianus*) and Green Heron (*Ardea virescens*) were seen.

Further on, surrounded by a grove of Monterey cypress trees, stood an occupied house, and a number of barns. Here birds which frequent the habitations of man were numerous. Arkansas Kingbirds (*Tyrannus verticalis*), House Finches (*Carpodacus mexicanus frontalis*), Brewer's Blackbirds (*Scolecophagus cyanocephalus*), Willow Goldfinches (*Astragalinus tristis salicamans*) and Arkansas Goldfinches (*Astragalinus psaltria*) were observed. A number of nests were noticed; one of the House Finch contained unspotted eggs. At the mouth of the river among the rocks a pair of Killdeers (*Egialitis vociferus*) were nesting, and from a large

took flight. Near the mouth, where a sage-bush cañon extends to the river bottom, Sage Thrashers (*Oroscoptes montanus*) were abundant, and in the low scrubby willows were the nests made of twigs and lined with rootlets. At the head of these arid cañons the merry little Cañon Wren (*Catherpes mexicanus conspersus*) shares its lonely habitat with the rattlesnake.

Where a grassy plain extends along the shore up to the foothills, the Mexican Horned Lark (*Otocoris alpestris chrysolæma*) and the Western Meadowlark (*Sturnella magna neglecta*) were seen in large numbers. About the beginning of June the former were noticed in small flocks, and two weeks later a number of nests were found containing fresh eggs. The nests were placed in hollows among the grass and scantily lined with fine grasses. Nearly opposite the Point Sur Lighthouse an unfamiliar bird attracted my attention. On shooting, it proved to be a Western Grasshopper Sparrow (*Ammodramus savannarum perpallidus*) and dissection showed they were breeding. They were somewhat scarce, but two pairs being seen. Further on we came to a bridge over a dry creek bed, and as we approached, a perfect cloud of Cliff Sparrows (*Petrochelidon lunifrons*) rose in the air. Although it was only 110 feet across, we counted nearly one hundred nests. Some were freshly built, many with eggs, and others with young. These birds seemed to show a decided preference for the sides of tall straw stalks as feeding grounds and large flocks were observed, always flying about one side. In the willows, along these creek beds, the Lazuli Bunting (*Cyanospiza amoena*) was common, and the young in most cases had left the nest. About two miles further on we reached the mouth of the Big Sur River where a number of nests with young of Nuttall's Sparrow (*Zonotrichia leucophrys nuttalli*) were found. American Crows (*Corvus americanus*) were numerous, nesting, as they generally do, in laurel trees.

Suddenly, without warning, Old Sol sank behind the horizon, and we started for camp. Squirrels scurried in front of us as we returned, and a pair of Mexican Horned Larks were alternately flying and alighting ahead of us. As we reached the summit, we heard the loud rollicking call of the Black-headed Grosbeak, and the soft though clear ventriloquistic notes of the Russet-backed Thrush down the cañon, and one was loath to leave this pleasant spot with its varied and interesting bird life.

While in Monterey, on our way down, in a large salt water pond I noticed a number of Red Phalaropes (*Crymophilus fulcaris*). On approaching, several more flew from the tules, where they had been feeding, and hovered over my head. Returning to Monterey on June 15th, I again visited this pond, but not a Phalarope was to be seen.

It is interesting to note the difference in the avifauna of Monterey and Idlewild. At Monterey the pine and cypress are the principle trees while these are both absent at Idlewild, 25 miles down the coast, where the redwood predominates and a number of birds seen at Monterey are not to be found at Idlewild and vice versa.

A GROSBEEK COLONY.

BY VERDI BURTCH, Penn Yan, N. Y.

In the early days of my study of birds I considered the beautiful Rose-breasted Grosbeak quite rare in this county, though I now think that they may have nested here in certain localities at that time. However, I saw but 3 or 4 individuals from 1882 to 1889. On July 14, 1889, I saw a pair, male and female about a patch of alders near Branchport, N. Y., then I saw them again July 21 and 23 at the same place, and am sure they must have nested there.

But it was not until June 2, 1895, that I met with a Grosbeak at home on its nest. On this memorable day Mr. C. F. Stone and myself were exploring a new part (to us) of Potter Swamp, a large tract of swampy woodland consisting of elm, ash, oak, maple, and in some parts elder, tamaras and a few pine trees. It is about 9 miles long by $\frac{1}{2}$ to 1 mile broad, and is watered by a small stream. It is situated in a beautiful valley, the hills on either side at this season of the year being covered with growing crops, with here and there a small piece of woods making a fine setting for the numerous farm buildings.

We had been hard at work exploring the interior of the swamp, and as we met with nothing of interest, we came out to the edge where the thick woods were replaced by acres of elderberry bushes with some pussy willows and wild currant bushes interspersed with coarse grass with scattering maples, elms and scrub oaks. Soon Stone called to me, and on going to him I saw in a bunch of bushes a nest of rootlets lined with timothy grass, with a male Grosbeak sitting onto it. He allowed us to approach real close, then slipped off revealing four handsome eggs which were bluish-green, thickly spotted with reddish-brown. We searched the vicinity thoroughly, but could find no more nests or birds.

May 24, 1896, we visited the locality again, and found a nest containing 5 eggs, and again on May 31, when we found a nest with 4 eggs. The female was on this nest, and allowed me to approach within 2 feet of her—before she left the nest.

In May, 1897, we named this part of the swamp "Grosbeak Colony". At this time there

were about 25 nests there, nearly all of which were placed in the elderberry bushes, and were from 4 to 6 feet from the ground. An occasional nest was placed in bushes farther back in the swamp, and some were 10 to 15 feet from the ground. We found the male incubating on nearly one-half of the nests, and either bird would invariably stick to the nest until we could almost touch them, then they would slip off and keep near us uttering their sharp *Peck-Peck*.

In 1898 and 1899 there were but five or six pairs breeding here, but I found several pairs nesting in another swamp a few miles distant, and here their nests were sometimes placed in tamaras trees 10 and 15 feet from the ground. The song of the Grosbeak is pure and remarkably sweet, and is one of the most joyous bird songs that I have ever heard.

Well do I remember the first time that I heard its song. Stone and I were in this same swamp early in May, wading about among stumps and logs knee deep in the mud and water, when suddenly from a tree above us was commenced such a sweet song, and looking up we saw a male Grosbeak in all his glory of black, white and rose color, his whole form quivering with the ecstacy of that happy song. We stood there spell-bound until the singer had finished, and vanished into the depths of the swamp. No words can express the exquisite beauty of that song.

Breeding in company with the Grosbeaks at "the colony" were Yellow Warblers in great numbers, several pairs of Catbirds, Robins, Scarlet Tanagers, Black-billed Cuckoos, Red-eyed Vireos, Baltimore Orioles, Wilson's Thrushes, Mourning Doves, and on June 6, 1897, I found a nest of Cedar Waxwing only 4½ feet from the ground, in an elderberry bush at the edge of the bushes, a few pairs of Red-wing Blackbirds had their nests, and back in the swamp American Redstarts were common, nesting in saplings, and several pairs of Maryland Yellow-throats had their nests safely hidden in turfs of grass. We found here also, two young Woodcock which were but a few days old.

WILLIAM SWAINSON AND HIS TIMES.—VI.

BY THEODORE GILL, Washington, D. C.

(Continued from Vol. IV, page 171.)

"Let me however urge upon you one advise which, for your own sake, I should be sorry you despised. It is to characterize yourself, or get some friend to do so for you, all your new species. The specimens, you tell me, are now in England, & the task will be comparatively easy. I urge this, because you may not be aware that a new species, deposited in a museum, is of no authority whatsoever, *until its name and character are published*. I have repeatedly set my face against such authorities, so has Mr. Vigors, so has Ch. Bonaparte, and on this head we are all perfectly unanimous. Unless, there-

fore, this is done, you will, I am fearful, lose the credit of discovering nearly all the new species you possess, and this I again repeat, for your own sake I should be sorry for. To me, individually, your not doing so, would rather be advantageous.

"The more a book is quoted, the more is its merits admitted, and its authority established. it was on this account I so repeatedly requested the *use* only, of a copy of your book, that it might have been cited in "Northern Zoology" not having it—I could not therefore mention it,

"I shall always be as thankful to you as formerly for any information on the habits, economy, and manners of birds; but, as to *species*, I want not, nor do I ever ask, the opinions of any one. that is quite a different matter, and entertaining peculiar ideas on that subject, you must not feel surprised at my differing from you in almost every instance. My reasons will always be laid before the public. In the present case, we totally differ about *species* of Woodpeckers. I shall not, however propitiate a favourable opinion from you, or any one, by a compliment and therefore I will wait for some species which you yourself will admit, which I shall then give your name to, I am rather glad you did not accept my offer, for I am *now* assisting in bringing out an Octavo edition of Wilson, by Sir W Jardine which will be arranged according to *my* nomenclature.

Yours my dr Sir
Very faithfully
W SWAINSON"

Dr. Coues adds that "though the proposed literary partnership thus fell through, the two men continued on the most friendly personal terms. Audubon repeatedly speaks handsomely of his friend Swainson in his Journals; they were often together, both in England and in France; each dedicated a new species to the other; and one of the most complimentary reviews Audubon's work ever received was from Swainson's pen."

These comments of Coues might leave a mistaken idea in the reader's mind if not explained. As has been already indicated, the "most complimentary" review referred to was written by Swainson before he saw Audubon, the notices in the Journal were entered during Audubon's first visit to England, and then only was there any intimate intercourse. Swainson, in his Preliminary Discourse, in his work on Birds, and in his Taxidermy, animadverted on Audubon's work and it is probable at least that he cherished a grudge against his former intimate friend. At least, there is no evidence that the two ever met or had personal intercourse with each other or that Audubon paid a visit of several days to Swainson after his letter. Swainson's vanity and sensitiveness must have been sadly wounded by the reflection that *his name* was not considered an offset to any subtraction from Audubon's reputation, but both were too much men of the world to cease communication entirely for such a cause.

As Coues has said, later Swainson dedicated to Audubon a Woodpecker (*Picus Audubonii*,* now known as *Dryobates villosus audubonii*) in 1831, and Audubon returned the compliment with a Warbler (the *Sylvia Swainsonii*† now called *Helminthos* or *Helminthos*‡ Swainsonii) in 1834.

Audubon was not long in securing the services of an associate less punctilious than Swainson, and he made arrangements with Dr. William MacGillivray, then of Edinburgh, so that he might consider the want of fruition of his intercourse with Swainson a "fortunate failure."

The "*Picus audubonii*," however, was a *conditional* species in the opinion of Swainson. It was based on a specimen of "*Picus (Dendrocopus) villosus*" from Georgia "intermediate between the Pennsylvania specimens of *villosus* and the *Picus querula* [sic!] of Wilson" [= *Dryobates borealis*]. Swainson had "seen but one specimen." He dedicates it in these terms: "Should it eventually prove a distinct species, we wish to record it by the name of our friend, M. Audubon, whose exquisite Illustrations of Birds of his native country justly entitles him to this tribute of our admiration; and we trust our friend will be able to procure a sufficient number of specimens from his native province (Louisiana), to establish the *Picus Audubonii* as a species in his great work."[§]

Note that Swainson ex-anglicizes Audubon by the prefix M.! Like some other Englishmen he divided civilized mankind into two great sections, - the English-speaking to whom the prefix Mr. was restricted, and the non-English on whom was forced the denomination of M., whether French, German, Spanish, or other.

Audubon repudiated this species. In 1839 in the fifth volume of his his Ornithological Biography, (p. 194,) he has "Audubon's Woodpecker, *Picus Auduboni*, Trudeau," and at the end of preliminary remarks, adds: "My friend Mr. Swainson has also named after me a woodpecker, procured in Louisiana,|| but which I believe to be only an immature specimen of *Picus pubescens*." All recent ornithologists, however, concur in considering the *Picus audubonii* of Swainson and that of Trudeau as conspecific.

This adoption by Audubon of a name which he well knew had been previously used for a species of the same genus is a remarkable instance of his want of appreciation of usage among naturalists. Indeed, the entire history is remarkable. Trudeau, in his "Description of a New Species of Woodpecker" in the Journal of the Academy of Natural Sciences of Philadelphia, (vii, 404-406,) describes the "*Picus Auduboni*" as a new species without any reference to Swainson. He claimed that "this species resembles the Hairy and Downy Woodpeckers in plumage, but is very distinct, and is intermediate in size between them. It seems in fact to form a passage from the Hairy to the Downy Woodpecker." It was based on a single bird killed by Trudeau near New Orleans.

The descriptions of both Swainson and Trudeau have been read with specimens of the southern Hairy Woodpecker (*Dryobates villosus*

*Fauna Bor.-Am., ii, 306.

†Orn. Biog., ii, 563.

‡*Helminthos* has been transformed into *Helminthos* by Salvin and Godman and so adopted by Sharpe (Cat. Birds B. M., X, 229). But, as Prof. Augustus C. Merriam has shown, *Helminthos* is correctly formed and in accordance "with a large number of models, as *h. etheros*". There is "a stem, *h-lemi*, used by Aristotle, which, with the addition of *-theros* [or *-theros*] from *ther*, would give the word of Rafinesque exactly and legitimately."

§Swainson in Fauna Bor. Am., II, 306.

||Swainson, it should be recalled, claimed Georgia as the provenance.

audubonii), the typical Hairy Woodpecker (*Dryobates villosus*) and the Downy Woodpecker (*Dryobates pubescens*) for comparison and the description of Swainson, as well as that of Audubon, is applicable to the first. In other words the two authors have independently (?) given the same name to the same species, and that name in no wise suggested by any characteristic of the bird! It is a strange coincidence and it is almost equally strange if Trudeau's attention had not been called to the previous use of the name he adopted. The previous use would have effectually precluded its subsequent use for another species, as Audubon and Trudeau should have known.

This treatment of the Woodpecker throws light on the paragraph in Swainson's letter respecting difference "about species of woodpeckers." We may infer that Swainson had shown the Woodpecker in question to Audubon and proposed to name it after him and that Audubon suggested that it was the young of the Downy Woodpecker. But Swainson did not "wait for some species" which Audubon would "admit" and never named another after "our friend," as he promised to do.

The species dedicated to Swainson was not a conditional one but so distinct that recent American ornithologists consider it to be the type (and only representative) of a distinct genus—*Helinaia* of Audubon. Audubon commemorates Swainson thus:* "To none of my ornithological friends could I assuredly with more propriety have dedicated this species than to him, the excellent and learned, whose name you have seen connected with it—to him, who has himself traversed large portions of America,† who has added so considerably to the list of known species of birds, and who has enriched the science of ornithology by so many valuable works. Surely you will allow that on none else could I with more propriety have bestowed it."

WORK IN CONNECTION WITH THE BIRDS OF THE
FAUNA BOREALI-AMERICANA.

In the first half of 1828 Swainson entered into an arrangement with Dr. John Richardson to co-operate with him in the preparation of the volume on Birds of the Fauna Boreali-Americana Richardson had accompanied the celebrated Sir John Franklin in his first two expeditions into the "fur countries." The first expedition "was formed in the several springs of 1820, 21 and 22, on the Saskatchewan at Fort Enterprise and on Great Slave Lake respectively; and in the autumn of 1822, at York Factory (lat. 57°), Hudson's Bay." The second expedition was made in 1826 and 1827. On this expedition, in 1826 "birds were collected at Fort Franklin, on Great Bear Lake," and in 1827 "at Carlton and Cumberland House on the Banks of the Saskatchewan." Bird collecting was, of course a mere incident of these expeditions. "As the entire summer of each year was spent in travelling," the expeditionaires did not reach winter quarters "until after almost all the migratory

birds had retired to the southward. Nothing could, therefore, be done beyond securing examples of the few resident birds, until the following spring, when the interval of a month or six weeks, which occurred between the first melting of the snow and the commencement of the summer journey, was devoted almost exclusively to collecting birds." All the specimens were prepared by Dr. Richardson and Mr. Drummond, his assistant.

The collections made on the second expeditions were supplemented by others and thus the material was secured for the preparation of "The Birds" of the Fauna Boreali-Americana. That work "contains two hundred and forty species, and about twenty-seven in addition are described by Pennant and Vigors of inhabitants of the northwest coast, making in all two hundred and sixty-seven."

The work was divided between Richardson and Swainson. Richardson himself prepared the descriptions of species and the discussion of their geographical distribution and did his part well. He deferred to Swainson in matters of nomenclature and classification. Swainson gave the outlines of his classification, and supplied "Introductory Observations on the Natural System" (p. lxi-lvi) as well as the "preface" (p. lvii-lviii). He also added comments on the families and on many of the species. His most important contribution, however, was the illustration of the work. He furnished 50 colored plates (Nos. 24-73 of the whole work) and 41 wood cuts representing "parts" of external structure.

Swainson informs us that this work "occupied no inconsiderable portion of two years; while impaired health and the necessity of prosecuting literary engagements previously made, have all contributed to retard the publication." His "Introductory Observations" were dated July, 1831.

Swainson accepted from the British Government through Richardson fitting recompense for his artistic contributions. It appears that he not only made the drawings, but engaged "in engraving the plates of the work, the only portion of such works", says Vigors (Zool. Mag. v, 203), "on which there is ever a question regarding recompense." Vigors thought "he was amply paid for the employment," but gave no data on the subject. Swainson objected to the statement of Vigors (Mag. iv, 334) that he was "employed" by Richardson and obtained from the later a testimonial that he had "voluntarily and at a great personal sacrifice of time, and a considerable one of expense, contributed a large and most material part of the letter press to that work" without receiving "any pecuniary reward for these exertions." (Zool. Mag. iv, 484).

Swainson was enabled to increase his collection from the specimens that came under his eyes. Richardson reported that "between 70 and 80 species had been presented to Mr. Swainson, by permission of the Right Honourable the Secretary of State for Colonial Affairs." (F. B. A., ii, vi.)

*Orn. Biog., 11, 564.

†It should not from this be inferred that Swainson ever visited North America; he never did.

THE OSPREY OR FISHHAWK; ITS CHARACTERISTICS AND HABITS.

BY THEODORE GILL, Washington, D. C.

"As is the Osprey to the fish, who takes it
By sovereignty of nature"
Shakespeare, Coriolanus, IV. 7.

One of the most characteristic and conspicuous birds along portions of the American seaboard as well as in the neighborhood of some inland waters is the bird known as the Osprey or Fishhawk. The sojourner in or near the chief watering places of the New Jersey coast, especially Cape May or Atlantic City, by an easy walk or ride may find its haunts or perhaps may see it soaring overhead in the town itself. It is readily recognizable in flight by its long pointed wings, the white belly and the white head. Its habits are especially interesting and a record of them will now be given. But first, its place in

the present writer has not revealed any evidence of versatility of the outer toe.

Pandion, then, being the only recognized genus of the family, really needs no diagnosis as such. Nevertheless, the characteristics which are manifest in those parts from which generic characters are derived from groups of the related family of Falconids may be advantageously set apart from those of minor importance. Instead of giving them in original terms, they are mostly translated from Savigny's admirable diagnosis in which they are compared or contrasted with those of other genera established by himself. This diagnosis will be found to be at least equal to any that has been framed since and deserves reproduction as a sample of the



FLYING OSPREY SEEN FROM BELOW.

(Photographed from mounted specimen by Paul Bartsch)

the system and its nomenclature deserve attention.

The Osprey is distinguished from all other "diurnal birds of prey" by the versatility of the outer toes; these, in a state of rest, may be carried forward as in the Falconids, but when prey is taken, the toes are generally thrown backwards so that the capture is secured by the claws ranked in opposite pairs, and a more efficient grasping instrument is thus improvised.

The importance of this character was first appreciated, to some extent at least, by Bonaparte who constituted for the genus the subfamily *Pandionini* and he was followed by Sundevall. Later R. B. Sharpe not only elevated this group to family rank (calling it *Pandionidae*) but went to the extreme of differentiating it as a suborder ("*Pandiones*"). To family rank it is now generally acknowledged to be entitled. The genus *Pandion* appears to be the only known one of that family, although Dr. Sharpe in his latest work (*Handlist of Birds*, volume i, p. 279, 1899) still combines with it the Indian genus *Poliioactus*. That type, however, appears to be a true Falconid related to the Bald Eagle (*Haliaeetus*), as it has been claimed to be by Gurney, Newton, and Ridgway. An examination of the skins by

best ornithology of the earliest decade of the century. The only liberty that has been taken is a slight change in the sequence of characters and the addition of certain paragraphs or words, especially those descriptive of the head and tibial feathers. The sequence in Savigny's work is as follows: *Beak, Tongue, Mouth, Tarsi, Toes, Claws, Wing, Tail, Eyes*. When new words have been injected in Savigny's paragraphs, they have been inclosed in brackets [].

Savigny, it may be added, ranked *Pandion* as a genus of the family Falconidae in an enlarged sense; the family was called by him "Les Eperviers, Accipitres". He admitted therein the following genera:

AETI.	* * *
5. Aquila.	10. Pandion.
6. Haliaeetus.	11. Elanus.
7. Milvus.	
8. Circus.	HIERACES.
* *	
9. Daedalion.	12. Falco.

The sequence and combinations of the genera will give an idea of his views of the affinities of the genus—views not now held.



OSPREY SITTING.

(Photographed from mounted specimen by Paul Bartsch.)

PANDION.

Synonymy.

- Pandion Savigny Desc. de l'Égypte: Hist. Nat., 1, 1re partie (incl. Syst. des Oiseaux de l'Égypte), p. 95, 1809.*
 Trionches Leach Syst. Cat. Mam., etc. Brit. Mus., p. 10, 1816.
 Balbusardus Fleming Hist. Brit. Animals, p. 51, 1828.
 Falco sp. Linne and old Authors.

Head rather large, with very convex forehead, and with rather long erectile feathers behind.

Eyes approximated to the beak, almost level with the head [a fleur de tête].

Beak quite large, nearly straight at its base, swollen dorsally; *cere* lobed below the nostrils, very short, hispid; *nostrils* imlulate, oblique, nearly longitudinal, the base of their aperture patulous and the upper border membranous and very thin; *lower* mandible at the base relieved by a feeble crest.

Mouth scarcely split to the anterior angle of the eye.

Tongue oblong, quite wide toward its tip, simply rounded below, its surface almost smooth above and its tip thick and entire.

Tibiae with densely appressed soft short feathers not extending to the tarsal joints.

Tarsi very robust and reticulated, being furnished on both faces with prominent hard small scales [the anterior largest] which are imbricate from above downwards on the anterior surface and from below upwards on the posterior.

Toes large, rough to the touch, entirely destitute of membrane; the *middle* little larger than the lateral; the *outer* larger than the *inner* and readily versatile backwards.

Claws equal, very large, very sharp-pointed, [approximately] semi-circular, all rounded and smooth below; that of the *middle* [toe] nevertheless with a saillant ridge along its inner [lower] side.

Wings very long and extending beyond the tail; with five emarginated *primaries*; the first scarcely larger than the fifth and both much shorter than the three intervening; the third longest.

Tail [subtruncate or slightly convex] composed of [nearly] even feathers; [outermost shorter].

*As the reference here given to Savigny's work differs from some authors' it may be well to explain that the first volume of the "Description de l'Égypte" devoted to Natural History (Histoire Naturelle, Tome premier) is composed of four parts, each separately pagged. The first part ("premiere partie") has contributions from Geoffroy Saint Hilaire (father and son), Savigny and Audouin. The other parts are also by Savigny with explanations of plates by Audouin. The only ornithological contributions are in the first and third parts (l. iv, p. 63-114; l. i, p. 251-324). The only pages on which *Pandion* is described are on l. i, p. 95-97. The misleading date of the entire volume is 1809.

Some at least of the contributions apparently were also issued with special pagination and title pages. Thus the reference to page 35 by Professor Newton would correspond with page 95 of the entire part if we add a title to represent pages 1 and 2 of the separate.

The reference to page 272 by Dr. Sharpe is not reconcilable with any fact known to the writer. (The 8vo edition is not accessible)

See also Sherborn's article on Savigny's work (P. Z. S. 1897, pp. 283-288).

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Comments.

A NEW VOLUME.

We again enter into a new volume of THE OSPREY—the fifth of the series. The same editors will attend to its interests and add to its interest. The features that have been pronounced to be most interesting in the past volume are the personal notices and biographies. These, consequently, will be continued and perhaps amplified in the new one.

SWAINSON'S CORRESPONDENCE.

The biography of William Swainson was intended originally to be completed in four numbers, but the materials for the undertaking were found to be so entertaining and important for the history of ornithology and zoology generally that we have willingly yielded to the requests of subscribers to the magazine and enlarged its scope. It will be continued through several numbers more—how many will depend on cir-

cumstances. It is an interesting coincidence that recently the Linnean Society of London has obtained a large collection of letters covering part of the correspondence of Swainson, or rather with Swainson, from his youth to the period of his departure from England for his New Zealand home. It is reported that this correspondence was purchased from a daughter of Swainson, who had returned to England, for the sum of 50 pounds—about 250 dollars—and that in the negotiation for its transfer Sir Joseph Hooker, who, when a young man, like his father knew Swainson and was a friend. At nearly the same time as Swainson, Sir Joseph saw New Zealand, but as an attaché (assistant surgeon) of the celebrated exploring expedition to the Antarctic regions commanded by Sir James Clark Ross, and not as a colonist. This correspondence is said to be very interesting and important from a historical point of view. It includes many letters from Audubon and other American naturalists, and some of them are said to be very critical of Audubon. The entire correspondence has been put in order, arranged under writers' names, and duly ticketed or briefed by Dr. Albert Günther; it will be the subject of his address as retiring president of the Linnean Society. We hope to be able to secure the use of part of the correspondence for the biography now being published in THE OSPREY.

OSPREY CORRESPONDENCE.

The correspondence and business of THE OSPREY has increased to such an extent as to seriously interfere with the engagements of the manager, and to some extent correspondence has been neglected. We beg the pardon and ask the indulgence of those that may have felt aggrieved on account of neglect. For the next year a special manager has been engaged and will attend to correspondence and other business.

POSTPONEMENT OF FUTURE NUMBERS.

The issues of THE OSPREY for the next few months will be delayed—partly to make the magazine year correspond with the calendar year. The current (fifth) volume will extend through the entire year 1901. To enable this to be done the first number will be for the months of September and October; the second for November and December. The full quota of numbers (12) and the full number of pages (192) will be furnished.

Notes.

BIOGRAPHIES OF AMERICAN BIRDS.—In this number we commence the publication of a series of systematic biographies of North American Birds in conformity with the system suggested in the *OSPREY* for February, 1899. Naturally we begin with the biography of the bird after which the magazine is named—the Osprey—under the respective heads all that is definitely known of importance is recorded respecting the habits and characteristic of the bird.

THE *AUK* hereafter "will be issued from Cambridge, Mass., instead of New York, its distribution having been put in the hands of Mr. E. W. Wheeler, who for many years past has been the '*Auk*' printer. The editor will remain as heretofore with headquarters at the American Museum of Natural History, New York.

THE SELECTION OF JOHN JAMES AUDUBON FOR THE HALL OF FAME OF NEW YORK has been announced.

THE EIGHTEENTH CONGRESS OF THE AMERICAN ORNITHOLOGISTS' UNION will be held in Cambridge, Mass., from Monday, November 12th to Wednesday, November 14th.

A ROYAL MEDAL FOR CONTRIBUTIONS TO ORNITHOLOGY has been awarded by the Royal Society to Professor Albert Newton. Those contributions have been very numerous and extend over a period of about half a century (1852-1900.)

A SPECIAL COURSE OF LECTURES ON BIRDS has been provided for in the American Museum of Natural History. Six have been announced for Saturday afternoons at 3 o'clock, beginning November 10th. Mr. Frank M. Chapman will be the lecturer.

THE APPOINTMENT OF MR. OUTRAM BANGS as an assistant in mammalogy in the Museum of Comparative Zoology at Cambridge, Mass., has been made. Mr. Bangs is well known as the owner of a fine collection of birds as well as of mammals, and the describer of a number of previously unknown species.

THE CATALOGUE OF THE LIBRARY OF THE BRITISH MUSEUM with titles under names of authors has been completed. This has extended to "four hundred large volumes and numerous supplements", has been in course of printing twenty years, and has cost about two hundred thousand dollars. A subject catalogue will be printed later.

THE APPOINTMENT OF DR. EMILE OUSTALET TO THE PROFESSORSHIP OF ZOOLOGY (MAMMALS AND BIRDS) IN THE MUSEUM OF NATURAL HISTORY at Paris is announced. Dr. Oustalet is well known for his contributions to ornithology, and has been elected to succeed the eminent

Professor A. Milne Edwards whose death was announced in the *OSPREY* for May, 1900. M. De Ponsargues, whose investigation had been mainly in the line of Mammalogy, was a rival competitor. The appointment rested with the minister of Public Instruction of France.

BIRDS AS INDICATORS OF RANK are made use of in China. Mandarins may be distinguished by the birds which decorate their uniforms, as well as by their buttons. Mandarins of the first rank have a bird known as the Fung embroidered on their clothes. Mandarins of the second rank have their robes adorned by the figure of a Cock. Mandarins of the third rank have a Peacock. Mandarins of the fourth rank are adorned with a Pelican. Those of the fifth rank are easily distinguished by the Silver Pheasant. Those of the sixth rank are favored by a Stork. Mandarins of the seventh rank have a Partridge. Mandarins of the eighth rank a Quail, and mandarins of the ninth rank, the humble Sparrow.—*Exchange.*

WILD TURKEYS ABUNDANT is the general remark this season, at least in Western Maryland and Virginia. According to newspaper reports, no less than seven Wild Turkeys were killed at a single shot near Burlington, West Virginia, by a man named Richard Stemmel. "He had the turkeys baited and went out to watch for them, and in about twenty minutes after he went to his blind the turkeys came, and he fired into the bunch while they were taking the bait and killed seven". The largest Wild Turkey killed which has come under our notice was obtained near Bowman's Station, Somerset County, Pa., and weighed twenty-two pounds. Wild Turkeys naturally command a higher price in the markets than the domesticated ones, the quotation about Thanksgiving Day being about 20 cents a pound.

PROTECTION OF BIRDS has been exemplified in a very practical manner in Maine. On the 8th of October in Bangor, the first seizure of illegally shipped game for the season and the first in the country under the new Lacey law was made. One barrel and two large boxes containing the breasts and wings of Tern were intercepted on the arrival of the Washington county train.

The skins were from Perry and were consigned to New York dealers. There were skins amounting to \$500 in value in the cases. The Maine law forbids the killing of Tern or the possession of the same except alive, and the penalty provided is \$10 for each bird.

The significance of this measure will be seen when it is explained that the Lacey law passed by the last Congress also prohibits the killing of other insectivorous birds. According to this law the shippers and consignees have made themselves liable to trouble, not only with the Maine authorities, but also with the United States Government. *Condensed from the Sun, N. Y.*

THE SORA RAIL AS A GAME BIRD came into season in September. Mr. Bartsch, in his article in the present number of the OSPREY, has given some of his experience with it and we add here a readable article on the bird published in the *Richmond Dispatch*. It gives the sportsman's ideas about its movements.—EDITORS.

The Sora season is here now. Nature was benign when she introduced the Sora time to East Virginia. It comes just after the intense heat of summer and just before the Partridge and Hare season begins. As the stereotyped expression has it, "it fills a longfelt want." Then nature never set up a better target for the amateur sportsman than a Sora. The little birds have to be coaxed out of the way far enough to save themselves from being shot all to pieces. They will sit on the grass in the marsh and wait for the city hunter to take good aim; should, perchance, the idea get into their pretty little heads to fly before the boat, they do so in such a slow, faltering sort of a way that it looks like a pity to shoot them. But, mirabile dictu, to shoot them and hit them are often different things, as many a city and country sportsman has found out. It is a "dead sure thing" that fails.

Sora are found in the marshes that fringe the James, Pamunkey, Mattaponi, Chickahominy and other rivers and streams of tidewater Virginia. They come into the marshes from nobody knows where about September 1 and go to the same locality about October 15, or as soon as frost comes. The proximity of the marshes to Richmond and the really fine sport of shooting them has made the wilds along the rivers of eastern Virginia the Mecca of many Richmond sportmen. There are a number or first-rate shots in Richmond. Every day or so a company of young men and middle aged, who have been practising on clay pigeons all the summer, come back to the city, after the absence of several days, or even a day, bringing several dozen, even a dozen dozen or more, of the best-tasted birds, when properly cooked, of all those that "cleave the air or dip the wing beneath the wave." The sportman is shoved through the marsh in a boat by a river man and shoots the birds as he sees them.

Sora are 75 cents a dozen now, and in a few days, if they continue to increase, will be selling for 50 cents. They hardly ever get lower than this to the housekeeper.

While the city men hunt Sora for the pleasure there is in it, there is a large company of men who live along the rivers in eastern Virginia, where the birds are found, to whom the hunting means hard work, broken rest and a means of earning a livelihood for wives and children.

The river man rents a marsh if he hasn't one, and when this business arrangement is made he has to secure his lightwood. He has, of course, his boat and his engine. The engine lasts for several years; if well cared for, a lifetime. It is a very different sort of thing from an engine in the common acceptance of the term. It is nothing more than an iron rack, elevated on a staff some nine feet. It holds the lightwood, which in turn furnishes the light. It must be recalled

that Sora are hunted for market at night, when the tide is "up" the country people say, or "in," as the town people, who know about tides mainly through the physical geography, put it. The great task of the "soracer" is to get his lightwood. For years and years it has been used; first, before the day of lamps, to make the light upon the family hearth, and now to kindle the splendid wood fires when they are first started of a cold morning, or to brighten it when, through neglect, it has burned low. Now the supply is nearly exhausted, and the soracer has to go miles and miles into the very heart of the primeval forest for the several wagonloads which are required to carry him through the season of about forty-five days.

Each high water is about an hour later than the one the night before. So, if the soracer goes out at 8 o'clock to-night, he goes about 8:45 or 9 to-morrow night. He is forced to return to the shore as the ebb tide comes and the water leaves the marsh. Most people know that marshes where Sora are found are covered several feet deep with water at "high water," and are nothing but slick, black mud and tall wild oats, tuckahoe, and cut lemon, when the "tide is out." The birds live in the oats and feed on them. The reason in most cases that more Sora are killed to a boat at some times during the season than others is on account of the tides. Sometimes, when the wind is from the west, even the high tide is too low to flood the marshes deep enough for the soracer to shove his boat through the oats and grass. He has to hunt along the creeks and thoroughfares which traverse the marsh in many places. It is a saying often heard in the country, if not in the city, that "slapped" birds are much better than "shot" ones. This is to say that market hunters, of course, do not shoot their game, but kill them with a long paddle—eighteen feet long—with which they shove their boats through the marshes.

The glowing light from the engine, a torch indeed, eighteen inches square and blazing several feet high, blinds the little birds. They sit, in terror, upon the grass, or swim in and out among the tufts of grass, until the soracer is in reach. A slight blow from the heavy paddle "settles his hash forever," as the country boy says, who goes out with his father for the fun of it. The bird is not bruised, and is much to be preferred to the shot bird, which is often badly torn. The custom is that only one man goes to a boat, but sometimes, particularly with boys and old men, one goes to shove, and the other to shove when he can, and also to "slap." It is not an unusual thing for a soracer to kill nine or a dozen Sora, when they are plentiful, while his boat is in one place. He stands and slaps the poor little things until his arms are tired. Such a night as this he is apt to kill fifteen or twenty dozen birds, for which he will probably get a net price of 30 cents. This does not happen often, and only on very high tides.

The good soracer makes from \$50 to \$75 in a season lasting from September 1 till October 15.

UNUSUAL RESCUE OF YOUNG.—We give the following account of rescue of a young bird by its parents without endorsement. "It is important if true." We reproduce it from *The Boston Christian Register*.—EDITORS.

During a high wind one day this summer a young Oriole was thrown from its nest to the ground. It was picked up by a kind hand, and kept in the house till the storm was over, and then placed on the roof of the piazza. A watch was kept behind the closed blinds of a window near by to note proceedings on the part of the parent birds. They, in the meantime, had seen the little one borne away, and had followed it to the house, and, as it was kept near the open window, its cries had apprised them of its whereabouts. They soon came to it on the roof and hovered over it, doing much talking and consulting together. Finally, they alighted near the little one, and the female slipped her wing under it and seemed to urge some course of action upon the male, who fidgeted about, coming to the little one, spreading his wings over it, then flying to a tree, when the female followed him, and brought him back, and again slipped a wing under the little one. Finally, he seemed to understand or to get his nerves under control, and, slipping his own wing under, together they made a sort of cradle for the birdling, and, each flapping its free wing, they flew to the tree,

bearing it to a place of safety among the branches, where it was lost sight of.

EGGS OF THE COMMON GUILLEMOT AND RAZORBILL have been illustrated in the last volume (xxxi) of the "Report and Transactions" of the Cardiff Naturalists' Society, by Mr. R. Drane.

Respecting the Murre or Guillemot the author aptly remarks: "Probably there is greater variation in the eggs * * * than in those of any other species," and 48 variations are, in 12 plates, "exactly reproduced by photography and colour" so as "to present visibly to the reader the widest possible range of difference in size, form and colour". Three plates (1-3) are designed to show the "extremes of colour"; four (4-7) "extremes of marking;" three (8-10) "average examples" and two (11-12) "extremes of size and form".

The Razorbill's eggs are represented by sixteen specimens delineated on four plates (13-16).

Mr. Drane remarks that the eggs of the Murre or Guillemot and those of the Razorbill are often so similar that "they might be confidently assigned to either the Guillemot or Razorbill," but in the eggs of the latter "the blue ground and vermicular markings of those of the Guillemot are never found," and "though the Guillemot's egg may be occasionally ovoid, that of the Razorbill is never pyriform".

Literature.

BIRD HOMES. THE NESTS EGGS AND BREEDING HABITS OF THE LAND BIRDS BREEDING IN THE EASTERN UNITED STATES; with hints on the rearing and photographing of young birds. By A. Radclyffe Dugmore.—Illustrated with photographs from nature by the author. New York: Doubleday & McClure Co. 1900. [Sm. 4to, xvix, 183 pp., 48 pls.] The author and publishers of Bird Homes have given us a very attractive volume which will be a most acceptable present for the holidays—or, for that matter, any other time.

The scope of the work is well described in its title and more at length in the publishers' notice. We cannot do better than to reproduce it.

It "is a popular and intimate account of the nests, eggs and breeding habits of the land birds that nest in the Eastern United States. It is the first time that this fascinating subject has been adequately treated for the general reader, and the book is a revelation of bird 'personality' in many ways. Particularly notable are the illustrations, (in color, and black and white) all of which were made directly from the nests and birds by the author. The notes on bird photography and on the rearing of young birds give information not attainable elsewhere and of great interest to nature-lovers and students."

The subject matter is divided into two parts: (1) generalities, and (2) descriptions of nests. These are considered under nine categories, viz:

1. Open nests on the ground, in open fields, marshes, and generally open country.

2. Open nests in woods, thickets, swampy thickets.

3. Covered or arched nests on ground.

4. Open nests in marshes, reeds, saw-grass, and low bushes in open country.

5. Nests in buildings, bridges, walls, rocks, banks, among roots, brush heaps, and holes in the ground.

6. Nests in holes in trees, stumps, or logs.

7. Semi-pensile, pensile, or hanging nests.

8. Open nests in trees, bushes, and vines.

9. Nests saddled on branches.

The numerous plates (48) are well reproduced and printed and a number (15) are represented in colors by the process method that has been applied so successfully by the same publishers to Dr. Holland's fine work on Butterflies. While most of the illustrations represent only the nests and eggs therein with their surroundings, a few add the birds themselves, generally setting on the nests. Four plates also represent the eggs in "colour". (The old English spelling is followed instead of the ordinary American "color".)

RIDGWAY'S MONOGRAPHS OF NORTH AND MIDDLE AMERICAN BIRDS. The first instalment of this long promised work was completed by Mr. Ridgway in September, and given to the Government Printing Office for publication. It is devoted to the single family of Fringillidae, and comprises descriptions of the 370 and more species and subspecies found in the region in question. A more detailed account of the work will be given in a future number of the OSPREY.



HEAD OF OSPREY
(Subadult male).

Photographed from life and communicated by Dr. R. W. Shufeldt.

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Original Articles.

A TRIP TO THE ZOOLOGICAL PARK.

By PAUL BARTSCH, Washington, D. C.

Bright and crisp dawned the morning of the tenth of December, the one chosen for a visit to the Rock Creek region.

Quickly and conveniently we were borne thither from the city by the Seventh Street Cars. We did not stop to change to the Chevy Chase line at the loop, which would have landed us at the west gate, but after a look up and down the deep narrow valley from the bridge, which spans the stream at this point, we plunged down the steep bank bounding Rock Creek on the south side.

Wild and romantic is the country which hems our restless stream, and for the most part covered by a mixed forest. Bold bald rock exposures, covered only by the moss of ages, peer forth from among the trees which caress the bounding slopes. The region is rough and wild but with all its ruggedness it creates no impediment to the traveller, for numerous foot paths and beautiful drive-ways, make every portion of the entire reserve accessible to man.

It is a beautiful example of making what most people would have considered an impenetrable waste, a park fit for the gods.

The babbling stream, too, has been civilized and in many places spanned by low arched bridges and here and there a series of stepping stones mark places where the nimble-of-foot may change to the opposite bank. Many of the hill sides are covered by a tangle of laurel, forming welcome retreats and nesting sites to many of our birds and an almost impassible barrier to man, but even these thickets have been pierced so that to-day we may enjoy a pleasant walk among scenes which once required the utmost patience and perseverance.

What effect has all this improving had upon our birds, the birds which visit this reserve annually, you will ask. A very beneficial one I should say. The improving has little effected the actual conditions; it has simply tended to make the region an accessible one. Here seclusive birds like the Worm-eating Warbler and

Black and White Creeper rear their young annually and inform us of their presence by their characteristic querulous tones and wiry notes.

To-day these birds have sought their southern quarters, but the place is not deserted, for scarcely have we left the car line far enough behind us, to lose the fainter sounds and rattle of commerce, when the pleasing tones of our little friends in slaty gray and black, the Tufted Tit, come rollicking over the bills.

Jolly rovers they are at this season and most interesting denizens of the park. They are now usually associated with their near kin the Carolina Chickadee, a bird equally pert, pleasing and vociferous. The Zoological Park proper furnishes a pleasant winter resort to many of our feathered friends, since food is always plenty. There is always a crumb left over from the supply furnished to the confined inhabitants and the feeding, and the protection afforded by law has brought about a close companionship between bird and man. The ever present fear has to a great extent been abandoned by them, within the confines of the "Zoo" and not unfrequently you will find the peanut, pitched to an animal, seized by a Tufted Tit and borne to a branch to undergo the opening process. I feel positive that a little attention and patience would soon induce the bird to take food directly from one's hand.

While we were admiring the alar expanse of the California Condor, who held his shivering pinions wide stretched to the rays of the morning sun, I counted no less than ten species of our native birds, skipping about among the adjacent trees. The two already mentioned, several Brown Creepers, jerking their spiral course up the trunks of trees. I say the trunks, for it is the Creeper's habit (as a rule) to flit to the base of another tree, when he has reached the portion occupied by the leafy canopy, to begin his upward climb anew. I also noted that at the "Zoo" they did not despise moving upon the ground and seeking for eatables in this unusual

way; a manner, though not common, yet frequently observed in their larger fellow co-laborer, the White-bellied Nuthatch, who was similarly engaged, but seemed more partial (as a rule) to the more elevated portions of the tree.

Little Downy in his spotted garb was also present and jerked his head from side to side, while his body was neatly pressed against a limb, which he deftly managed to keep between us. These birds, together with the Kinglets flitting about in the pines, have the care taking of the trees and shrubs of the Park. They are the forester's best assistants and are ever busily engaged with their duties, even though they do occasionally join in a meal with their caged fellow creatures to add variety to their diet.

Each one of them has his special line of pursuit for which he is best adapted. The little busy ever joyous Kinglet gleans from the pines and evergreens that which to him is food and an imp of destruction to the tree. In his quick nervous manner he traverses many and many a tree within his beat each day and picks that which he passed the day before. The Creeper seeks the many little vermins that have established themselves upon, or within the crevices of the bark, well protected by their subdued coloration, but his sharp eyes enable him to detect them, and his long slender curved bill aids in their extraction. And what a glorious appetite he has, ever busy eating! His working hours seem but one continuous feast; from dawn till dark he is hungry and devours the luckless beasts which, but for his close scrutiny, would escape to prey upon their host.

The Downy, of a much more dignified bearing and slower motion, on the other hand goes deeper in the business, and even seeks the larva which are beneath the bark, and adds them to his bill of fare while the Nuthatch occupies an intermediate position among these winter laborers. He works the trees in every part, frequently he stops his upward course, turns about and jerks downward for a pace. The tree is his domain and he seems more at home in it than any other bird, for no other can surpass him in his ambles in this field. Note! the Woodpecker or the Creeper, if they wish to rehearse some portion of the field just trespassed, must and do back down. With them it is always a question of right-side up with care, while the acrobatic Nuthatch feels just as free moving head forward down a tree as up.

The Chickadee and Titmouse encroach upon the field of Creeper, Nuthatch and Woodpecker, but their sphere is more properly that of the branches. Each one therefore has some portion, it would seem, in which he is more at home than his co-worker.

These birds all love companionship and you will usually see a mixed band move about visit-

ing the different portions of their range in company, each one announcing his presence to his fellow journeymen by his characteristic note.

These and a pair of brilliant Cardinals, a noisy Jay, and a small flock of Juncos and a few White-throats comprised the goodly company assembled about the Condor's cage, which we left, after petting this huge fellow for a while and scratching that ever willing head of his in return asking for a photo. For which he willingly posed. We next turned our steps to some of the other captives, most of which had been transported to their comfortable winter quarters in the building just completed for that purpose. A few still remained out door among them the pretty, sullen; Night Heron and his kin the Green Heron. A whole cage full of the beautiful proud Mandarin Duck from China. The two mischievous Sand Hill Cranes ever on the lookout for plunder and not in the least opposed to stealing anything upon which they might be able to place their bill. Right next to these the cage with a goodly company of Great Blue Herons whose suspiciousness seems never to waver for an instance, etc., etc.

We next entered the aviary proper, where we admired the unsurpassable beauty and royal bearing of the Harpy Eagle and the stately grace of the Whooping Crane whose plumage rivaled the purity of virgin snow. We also admired the play of the quarrelsome Pelicans, who not so long ago enjoyed, together with the Crane, Swans, Gannets and Loon, the spacious pond, their summer home, where one had a chance to study their characteristics more freely than in their present somewhat narrow quarters.

One of the most interesting recent improvements in this house are the water basins in the Anhinga and Cormorant cages which are provided with a large plate-glass front, so that the public may enjoy the motion of these birds under water; unfortunately both the Anhingas and Cormorants were still engaged in slumbers sweet, when we visited them, the hour for exhibition having not yet arrived.

One of the Anhinga's bill was pointed sky ward, while the other, like the Cormorant, had his bill and part of his head neatly tucked away beneath the scapulars between his shoulders. We left them undisturbed and paid a visit to the Flamingos, Roseate Spoonbills, and Ibises; then left the room to bestow a passing glance upon the Hawks, Eagles and Owls, and also the Swans, Geese, and Ducks as we crossed the bridge on our way to the Fourteenth street cars. The hour announcing office time had approached and we had to bid farewell to the Park and its collections, as well as to the Song Sparrow who barked a "good morning sir" from the brush near the creek.

THE MOCKINGBIRD IN WESTERN KANSAS AND ITS ENVIRONMENTS.

BY ADDIE L. BOOKER, Grand Pass, Mo.

It was my lot during the spring of 1894 to spend some time in a small village situated on the Arkansas River in the southwest part of the State of Kansas, the region of drought and hot winds.

The village contained one good sized young cottonwood tree and a few scattering fruit trees, mere saplings that had not attained the size of respectable shrubs. About a mile out from town there was a nice thrifty young orchard of a number of seasons' growing. With the exception of the river bottom, mostly in alfalfa, the surrounding country, for miles and miles, was an unbroken expanse of buffalo grass, with here and there a clump of cacti, but not a shrub nor tree to relieve the monotonous landscape.

The bird life of this district was almost entirely different from that with which I was familiar—that of the Central Mississippi Valley. Aside from a few waders—Curlews and Sandpipers—along the river, the avifauna consists of species characteristic of the Great Plains.

Western Meadow Larks were quite numerous, also Prairie Sparrows and those queer companions of the prairie dogs, the Burrowing Owls, were found about every dog town. But, taken all in all, bird life was not very abundant, and songsters were particularly scarce. The list of song birds indeed was almost limited to the Western Meadow Larks.

The Common Meadow Lark had been one of my most intimate bird friends since early childhood, and it was with much pleasure that I made the acquaintance of his western cousin, who proved to be equally interesting—in fact more so—on account of the deficiency of song birds in that vast treeless country. His fine exhilarating voice was heard far and near.

One beautiful spring morning, some time after my arrival, I was surprised and delighted to hear a concert that made the Lark's sink into insignificance. It seemed that all the eastern birds had been turned loose in the desert air and were fairly making the welkin ring.

There were the notes of the Purple Martin, Crow, Catbird, Woodpecker, Jay and others in succession, though these birds themselves were not there. All of this music issued from the throat of a single lyricist, that most renowned of all our songsters, the Mockingbird.

Upon inquiry I was informed by the inhabitants that he had been a regular summer resident for several years. A pair of these birds had first appeared there soon after the setting of the orchard mentioned, and each season since they had built their nest and reared their young in this orchard.

This pair of birds had left their luxuriant southern home, with its beautiful shrubs, trees, vines and hedges, and taken up their abode where all is decidedly at variance with their natural habitat. What there was to attract them there, isolated from all their own and kindred species, with seemingly uncongenial environments, was a mystery. Was it their mission to make this little settlement more cheerful and homelike with their lively ways and polyglot songs? They were the only woodland birds that had yet ventured to follow civilization to this point.

Although the orchard was the Mockingbird's favorite haunt, he would come to the village several times daily, and from the solitary cottonwood tree pour forth his soul in song. He was an accomplished musician and master mimic, and it was quite evident that his education had been received from an eastern or a southern school, for his repertoire was great, and composed of notes wholly foreign to this section. A Mockingbird is a noticeable object under any circumstances, and this pair were the most attractive and conspicuous features of the village. They were cherished by the inhabitants, though none of them were bird students, and were very fearless and confiding, even coming to the door steps of the house where I was staying, to bathe at the kitchen pump.

NOTES REGARDING THE MIGRATION OF BIRDS AS OBSERVED AT THE WASHINGTON MONUMENT.

BY PERCY SHUFELDT, Washington, D. C.

For several years past I have been much interested in reports of the great number of birds killed during the spring and fall migration by butting against the Washington Monument. Beginning with September 3d of this year, Mr. A. E. Colburn and myself determined to make some personal observations on this point. We succeeded in enlisting in our service the two night watchmen, Mr. Talbot and Mr. Barry; to both of these gentlemen we owe our sincerest thanks for their efforts in delivering birds which were killed during our absence.

The comparative irregularity of our observations were caused mainly by the exactions of our daily work, which entail an early rising

and detained us often until late into the night. I am satisfied that only a very few of the birds killed during the absence of an observer at the time of their falling are saved on account of the numerous rats and cats which visit the monument in search of food. This year, from what we have been able to learn from the watchmen, has been the poorest for making observations of any for a number of years back. We have been informed that on some nights during previous years as many as "twelve or thirteen dozen" birds were picked up one morning; allow for birds eaten by cats and carried off by rats and an idea may be found of the number killed.

From the following observations it would appear that the conditions most favorable for the striking of birds against the monument are these: There must be a change in the temperature for the cooler, and a fresh breeze, preferably between E. E. N. and W. N. W.: add to these conditions a dark cloudy night and there will be surely *some* birds strike. If on the other hand you have a clear night with a breeze, a cloudy night without one, or a long spell of warm weather, the chances are against it.

If birds do strike during a calm night they are rarely killed but, allowing themselves a few moments to recover from their fall, they are off again into the night. When a stiff breeze is blowing the result is far different; they are thrown with great force against the hard marble, often mashing the skull, breaking the mandibles, or even splitting the breast entirely open, and are almost without exception dead when they strike the ground, which in some cases, is as much as a hundred yards from the base of the monument.

I am led to believe, from the observations which we were able to make, that death of birds in this manner is in no wise caused, as in the case of lighthouses, by attraction, but rather by the inability of birds when flying with a breeze to gauge the distance in time to avoid meeting death. In one case, a Great Blue Heron was seen to have a very close call for his life, by trusting himself too near. The startled cry that he uttered as he, by a narrow margin, escaped showed that he fully realized his danger.

Besides the birds collected Mr. Colburn was fortunate enough to secure a bat (*Atalapha borealis*) and some large grass-hoppers which were killed in this manner: these together with a few large specimens of moths constitute our entire collection.

The following are our observations as they were placed in a note-book at the time.

September 13th. Clear, no wind, nothing collected.

September 14th. Clear, no wind, nothing collected.

September 15th. Rainy, light breeze, one specimen of *Chaetura pelagica* procured alive; this is as far as I know the first specimen of this species collected.

September 16th. No observations were made.

September 17th. Mr. Barry bought 16 birds taken between 12 and 8 a. m. Representing the following species:

- Vireo olivaceus*: 3 specimens.
- Geothlypis t. brachidactyla*: 3 specimens.
- Setophaga ruticilla*: 2 specimens.
- Dendroica caerulescens*: 1 specimen.
- Dendroica virens*: 1 specimen.
- Dendroica pensylvanica*: 1 specimen.
- Sylvania canadensis*: 1 specimen.
- Sciurus aurocapillus*: 2 specimens.

September 18th. We visited the monument between 11 p. m. and 12, during which time we secured 23 specimens, and portions of a number of others.

- Empidonax flaviventris*: 1.
- Dendroica pensylvanica*: 2.
- Dendroica caerulescens*: 2.
- Dendroica maculosa*: 2.
- Dendroica virens*: 1.
- Vireo olivaceus*: 2.
- Sciurus aurocapillus*: 4.
- Geothlypis t. brachidactyla*: 3.
- Compsothlypis americana*.

Portions of a specimen of *Turdus a. pallasi* were secured.

September 19th. No birds struck.

September 20th. No observations were made; no birds were brought in by the watchman.

September 21st. Dark night, with wind from E. S. E.; only two birds were taken between 9 a. m. and 12.

Geothlypis agilis: 1 specimen.

Vireo olivaceus: 1 specimen.

September 22nd. We were at the monument from 10 p. m. until 12; dark, wind E. S. E.

Vireo olivaceus: 1 specimen.

Dendroica striata: 2 specimens.

Dendroica castanea: 1 specimen.

Compsothlypis americana: 1 specimen.

Geothlypis t. brachidactyla: 2 specimens.

September 23rd. Cloudy, S. S. W. wind, moderate; stayed from 10 to 12 p. m.

Colaptes auratus: 1 specimen.

Vireo olivaceus: 2 specimens.

Sciurus aurocapillus: 1 specimen.

1 bat.

A great many birds were heard flying on this night.

September 24th. Clear, calm; remained from 9:30 p. m. until 12 m.; birds were even scarce.

September 25th. Visited the monument from 9:30 until 12, wind E. S. E.; only specimens observed were *Sciurus aurocapillus*: 2.

September 26th. No observations were made.

September 27th. Warm clear breeze toward morning—birds brought in by watchman.

Melospiza fasciata: 1 specimen.

Vireo olivaceus: 1 specimen.

Dendroica caerulescens: 1 specimen.

Dendroica maculosa: 1 specimen.

Setophaga ruticilla: 1 specimen.

September 28th. From this date on no birds were taken, although several favorable nights occurred between this date and the present time; this I think has been caused by the unprecedented stretch of warm weather.

I consulted Mr. Wm. Palmer in regard to the specimens of *Geothlypis*; he diagnosed them as specimens, but not typical, of *brachidactyla*—probably from Southern New England.* It appears to me that continued and careful observations of the annual migrations of our birds from this source might be of considerable assistance in clearing up some of the vexatious questions of avian migration insofar as relate to the different order of flight followed by the numerous species. It is to be hoped that someone with time to devote to the work will take up and carry on observations.

*Palmer. The Maryland Yellow-throat. The Auk, Vol. xvii, No. 3, 216-242.

CORRESPONDENCE OF AND ABOUT AUDUBON WITH SWAINSON.

By THEODORE GILL, Washington, D. C.

The correspondence with Swainson of his contemporaries has been referred to in the columns of comments in the present number of the OSPREY. Among the first of its treasures are a number of letters from the great artist-ornithologist, John James Audubon. There are 24 of these, and some of them would necessitate a slight modification of the account of the intercourse between Audubon and Swainson derived from the former's letters to his wife, or at least they would supplement them and add further details. Dr. Günther has given a slight sketch of the character of Audubon's correspondence as well as a list of the letters and briefs of their contents.

Dr. Günther, "from the great number of correspondents" of Swainson, has selected "two ornithologists who by their fame claim our attention, Audubon and Prince C. Lucien Bonaparte." Respecting Audubon, he discourses in the following terms:

"Audubon's letters are rather disappointing: they contain chiefly matter relating to his personal and domestic affairs, and little of direct ornithological interest. The language in which they are written is sometimes as fantastic and unnatural as are many of the pictures on which he was engaged for his mammoth edition of the 'Birds of America.' The acquaintance between the two men commenced with an offer of Swainson to write a review of Audubon's work. The review (in Loudon's Magazine) was highly eulogistic, but probably would have been less so later on when Swainson became better acquainted with Audubon's method. He observed a discreet silence about the famous picture of 'The Eagle and the Lamb,' which did not escape Audubon's notice. Shortly after they paid a joint visit to Paris, where Audubon looked for subscribers to his large work*, whilst Swainson cultivated the friendship of the French Zoologists (particularly of Lesson), which a few years afterwards led him to break a lance for his foreign friends in an article entitled 'Vindication of certain French Naturalists.'" Audubon soon conceived the idea of publishing some letterpress to his collection of pictures, but as he himself did not possess the requisite leisure or qualifications, he was searching for assistance. At that time he does not seem to have been acquainted with Macgillivray; at least his name does not appear in any of his letters. So he placed a plan of the intended work before Swainson, who declined the proposal. This, as well as Audubon's return to America in 1831, led to the discontinuance of the correspondence, which afterwards was resumed for a short period only."

Probably those letters of Audubon will not be the less interesting to our friends because "they contain chiefly matter relating to his personal and domestic affairs" and have "little of direct ornithological interest." As to Dr. Günther's

judgment on Audubon's personality and works nothing need be said here.

The summary of the letters given by Dr. Günther follows:

- | | |
|-----------------------|--|
| London. | In reply to an offer by S. to review his works for a copy of them at cost-price, A. agrees, although his publications cost him twice the sale price.—Habits of <i>Lanius excubitor</i> . |
| 9 April 1829. | |
| 18 April 1828. | A. proposes to meet S. |
| 1 May 1828. | A most effusive letter of thanks for S.'s review.—His plan of publishing a work on British Birds does not meet with favour from any one. |
| 16 June 1828. | Another letter in high flown language. His method of composing the picture of the Eagle and the Lamb. |
| 1 July 1828. | On the same and other pictures composed or improved in London from various materials. |
| July 1828. | A. hopes the "Eagle and Lamb" will go to Windsor Castle. S. abstains from offering an opinion on the merits of the picture. |
| Aug. 1828. | Despondent about domestic affairs; proposes to S. a visit to Paris. |
| 21, 22, 25 Aug. 1828. | About the arrangements for the journey. Has received from Vigors the offer of £10 10s. 0d. p. sheet for a paper for the Zoolog. Journal. |
| 27 Aug. 1828. | To Mrs. S., who joins the party to Paris. |
| 1 Nov. 1828. | A. has returned from Paris where he got 14 subscribers to his work, which raised the whole list of subscribers to 144. |
| 7 Nov. 1828. | A. has sold his picture of the Blue Jays for 10 gs.; he has presented his work to the Linnean Society, without receiving an acknowledgment. |
| 20 Dec. 1828. | — |
| 25 Dec 1828. | A. mention that the skeleton of the Elephant from Exeter 'Change fetched £400. |
| 14 Feb. 1829. | Private affairs. |
| New Jersey. | |
| 14 Sept. 1829 | Private affairs. Habits of <i>Ampelis americana</i> . |
| London. | |
| 28 April 1830. | A. has returned to England, visits Paris again, sends S. |

*In this he was so far successful that he obtained 14 additional subscribers, which raised the total number to 144.

copy of the first Volume of Ornith. Biography; disapproves of S's engaging in controversial matters in his article on "Female Naturalists."

- 5 May 1830. About his mammoth publication; is greatly elated by his election into the Royal Society, and the recognition of his works by the U. S. Government.
- 26 July 1830. Considers a new Woodpecker named by S. to be the young of a well-known species; gives 30 birds to the Brit. Mus.
- Manchester.
22 Aug. 1830. About the same Woodpecker—A. proposes to S. the preparation of a new work, A. giving ideas, S. putting them into a pleasing shape, both authors joining their households during the progress of the work.
- London.
6 June 1831. A. returns to America for collecting purposes.
6 Dec. 1837. A asks for the loan of some birds.
11 Jan. 1838. About Prince Bonaparte.—*Cygnus bewickii* and other Northern Birds.

The memorandum of the letter which evoked Swainson's rather caustic reply of "2d October, 1830," (OSPREY, iv, p. 171.) was eagerly looked for and apparently the provocative epistle was that written from "Manchester" on the "22 Aug. 1830." The brief does not seem to tally well with the letter of Swainson, but no other does better. Swainson's letter was certainly not a direct answer, and the suggestion of partnership by Audubon was evaded or rather ignored. If this letter of 22 August was the only one, too, an error was made in the inference that Audubon had returned to Edinburgh to attend to the engraving and coloring of his plates there. Apparently and naturally Swainson's answer put a stop to the intimacy of the two, for there is no record of other letters from Audubon for seven years, except one from London dated "6 June 1831," announcing his projected return to America.

In "William Swainson and his Times" I assumed that Audubon had already reached Edinburgh when he wrote the letter to Swainson, but apparently he stopped on his way there.

It was not till early in October that he arrived in the Scotch capital. He then returned to "his old lodgings at 26 George Street, Edinburgh, where he felt truly at home with Mrs. Dickie." Soon after he received Swainson's letter, he made the arrangements which resulted in the text of his ornithological works. Miss Audubon, in "Audubon and his Journals," (i, p. 64.) remarks that "his choice of an assistant would have been his friend Mr. William Swainson, but this could not be arranged, and Mr. James Wilson recommended Mr. William MacGillivray." Miss Audubon later on (p. 65) adds: "the first

volume of 'Ornithological Biography' was finished, but no publisher could be found to take it, so Audubon published it himself in March, 1831."

Audubon seems to have made enemies in Philadelphia for two of the naturalists of that city wrote letters to Swainson about him—the only letters they sent to him apparently. Dr. Richard Harlan, the author of a volume on the mammals of North America, "Medical and Physical Researches," and other memoirs, in a letter of "20 Oct. 1829," calls "Audubon industrious and proud" no bad attributes, it may be remarked. Prof. Samuel Stelman Haldeman, a versatile naturalist who lived till 1880, was more severe. In a letter of "Oct. 1840," he urged "strong charges against Audubon who is not personally esteemed in America." (Such is Dr. Günther's diagnosis of the letter.) Those who have known Professor Haldeman can make their own inference from this statement.

Another very eminent—and good—ornithologist gave his opinion of Audubon's work in a letter to Swainson from Florence of 30 July 1839. Charles L. Bonaparte, then Prince of Musignano, (he did not become Prince of Canino till 1840,) wrote "about his movements," made "notes on S's birds," and told that he had "little faith in Audubon's drawings."

An antidote to Harlan's opinion may be found in a judgment on that naturalist passed by John LeConte, a well-known naturalist of the first half century. He was then a captain in the United States Army, but chiefly resident in New York. In 1828, however, he was in Paris and wrote thence under date of "11 May, 1828". He expressed the opinion that Harlan was "a very rash young man." (The "young man" was 32 years old.)

"Under Audubon, Victor Gifford (son of J. J. A.)," a letter dated "London, 8 May 1824", in which the writer "expects his father to arrive in England", is recorded. 1824 is evidently a slip for 1834. At the time indicated by Dr. Günther he was in Pennsylvania and New Jersey. "April 10, 1824," Audubon records that he was introduced to Charles Bonaparte in Philadelphia and "July 12, 1824," he "drew for Mr. Fairman a small grouse to be put on a bank-note belonging to the State of New Jersey." In 1834, he went to England; Audubon, with Mrs. Audubon and their son John, sailed from Charleston "for Liverpool, April 16," 1834 and "joined Victor in London, in May, 1834." There is no evidence of any notice having been taken of Victor's communication or of its having been followed up by a meeting of Audubon or Swainson.

Elsewhere we learn that apparently friendly relations existed between Audubon and Harlan. In a foot note in "Audubon and his Journals" (i, p. 65) it is recorded that Audubon wrote to Dr. Richard Harlan on March 13, 1831, "I have sent a copy of the first volume [of the Ornithological Biography] to you to-day." Audubon also dedicated to him a fine bird, *Falco Harlani*, now generally known as a subspecies of the common American Buzzard, *Buteo borealis harlani*. That form appears to me, however,

to be as well entitled to specific rank as some universally admitted species of the genus.

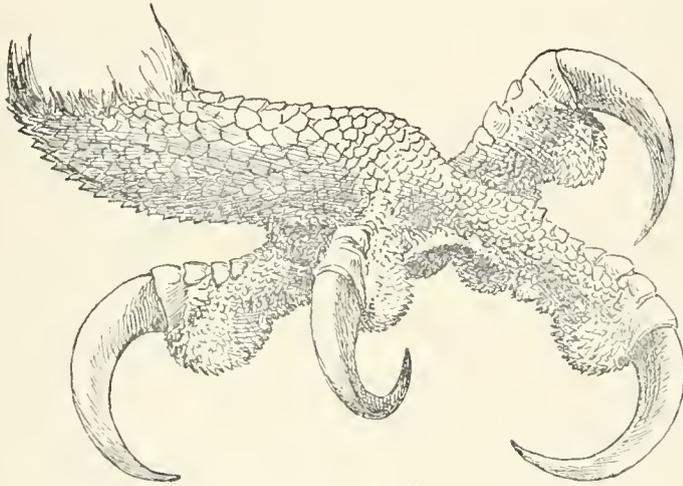
Apparently the only other letters in Swainson's correspondence relative to Audubon are two; one is from J. C. London from Bayswater, dated "8 April 1828," and probably is about the review which Swainson afterwards wrote; the other is from Peter Mark Roget, the Secretary of the Royal Society, dated "9 March 1830," and conveys the information that Audubon was "to

be balloted for at the Royal Society." Audubon was duly elected and, in a letter to Swainson of "5 May 1830," showed that he was "greatly elated by his election." The requisites for membership then were not what they are now! The Royal Society, by the way, was pronounced about that time, by its secretary, to have its "affairs" in a "critical state"—whatever that may mean. Such are the words used in Günther's brief of a letter of "5 Dec. 1830."

THE OSPREY OR FISHHAWK: ITS CHARACTERISTICS AND HABITS.

BY THEODORE GILL, Washington, D. C.

Continued from Page Vol. V, p. 12.



OSPREY'S FOOT

The classical name *Pandion* was given by Savigny in 1809, and, like many of the classical names imposed upon genera by naturalists, was bestowed for no obvious or real reason—simply as a designation to distinguish the group from others. Now, there were five personages of that name mentioned by ancient writers and it is not evident, from the nature of the facts, after which one Savigny designated the genus in question. Savigny gave no explanation whatever. All that need be said is that one of them was fabled to have been a son of Erichthonius, king of Athens, by the Naiad Pasithea, and that he became the father of Progne and Philomela, the former of whom was metamorphosed into a swallow and the latter into a nightingale. Both of the last names have been applied with some show of aptness to genera of birds—one of swallows and the other to the nightingale genus—but there is no apparent analogy or aptitude of any kind for the application of *Pandion* to the Fishhawk or any other raptorial genus of birds, although it might not have been entirely devoid of applicability for the Nightingale. (See Ovid's *Epistula ex Ponto*, 1, 36.) Nevertheless the name stands just as Black will do for a white man or White for a black man.

Leach's name—*Triorches*—was given apparently in ignorance of Savigny's work, and was

published only in connection with the species (*Triorches fluviatilis*) as a British bird in the British Museum. The name is only identifiable because it is mentioned as the scientific alternative of the English word Osprey.

Fleming's name "*BALBUSARDUS*, (*Pandion of Savigny*)"—was apparently given on the assumption that the name under which Willughby noticed the bird should be recognized as a generic designation—an entirely illegitimate assumption as the old English author described it as a species on the authority of Aldrovandi. The name *Balbusardus* is simply the latinization of the English *Balbuzzard* in a work written in Latin. In the English edition *Balbuzzard* is the word used.

The generally accepted English literary equivalent of *Pandion* is Osprey. This name has a long history. Among the educated English of the British islands, it appears to have almost entirely replaced all other names of the *Pandion* and yet it is not a true vernacular name. It is a corruption of the word *ossifraga* or bone-breaker (from *os*, bone, *frangere*, to break) used at least as long ago as Pliny's time and which was originally coined for a very different bird—the Lammergeyer or Bearded Vulture of Southern Europe and isothermal Asia. This Lammergeyer was reputed to be very fond of bones

and to carry large ones high up into the air and then let them fall from such a height as to break them into pieces. It is the Ossifrage of the Bible (Levit. xi, 13; Denton. xiv, 12). How this name became transmuted into Osprey and transferred to the bird called so now would be too long a tale to give here. (Pliny—x, 3—refers to it as a kind of ossifrage.) It has been in use in England under the form now current or as Ospray, Osfray, or other like for centuries. In 1601, Holland, in his translation of Pliny, used the synonyms "these Orfraies or Ospreis," and "their young Aspraies". In America, too, Osprey is rather a "book-name," although understood by almost all except the very uneducated.

Such is the name in literary ornithology. Among the common people, however, the bird was known as the Fishing or Fishhawk or Fishing Eagle. MacGillivray* records that "in the north of Scotland it is called the Fishing Hawk, in the west the Fishing Eagle. In Gaelic, it is named *"an Iolair-uisc* (the Water Eagle)". Fishhawk is the all but universally used vernacular term in the United States.

Mullet Hawk is also a local name in England.

Another name that has been attributed to the Osprey is Bald Buzzard. This has been alleged to be an old English name and occurs in some old authors. Further, an individual Osprey was described and illustrated under that designation in "The Ornithology of Francis Willughby" (1678, p. 69, pl. 6, f. sup). The versatile toe is especially noticed as a "most sure mark" distinguishing it from the "common Buzzard." Willughby also has "the Sea Eagle or Osprey" and paraphrased his description (p. 59) from Aldrovandi. He thinks the description "agrees exactly to the English Bald Buzzard", but, the latter "is a lesser bird" and so he treats of it further on in a chapter "of the several sorts of wild long-winged Hawks". This "Osprey" or "Ossifrage" of Willughby is, indeed, a Sea Eagle.

The name Bald Buzzard is a suggestive one and analogous to Bald Eagle. The bird called Bald Eagle is an Eagle in size, and although not bald, next to it: it has a white head! In like manner, the Osprey is approximately of the size of a Buzzard, and has also a white head, and is as much entitled to be called "bald" as the Eagle; consequently the designation in question might be supposed to be justified by analogy and historical testimony. The contention is certainly very plausible. Nevertheless, there is some reason to doubt whether the name is of truly indigenous English origin.

Bald Buzzard is not recognized in any of the standard ornithologies of the British isles as an existent vernacular name. On the other hand, Balbuzard is the common French name of the Osprey. Littré, indeed, derives the name from the English "*bald-buzzard*"; he adds, however, that there is also in low (late) Latin the word "*balbuzarc*, balbutier" (that is, to utter words in a hesitating or imperfect manner); that the Balbuzard may have been named ("*balbutieur*") on account of its cry, and that the English word

may have been derived from the French and assimilated to English words. Whatever may be the status of this explanation, we may be permitted to doubt whether the French would have awaited the development of the English language till the words Bald and Buzzard had assumed their present form before giving the name in question to a bird more common in their own country than in England. We should remember, too, that the Norman French introduced many names into England and Bald Buzzard may have been a fading reminiscence of their invasion—so faded, indeed, that the scientific records of the present day show no survival in the vernacular speech. Doubtless, investigation among old documents might settle the question. At any rate, for the present scepticism as to the aboriginality of Bald Buzzard as an English name and, still more, the derivation of the French name from the English may be entertained, even in the face of Littré.

DISTRIBUTION.

The genus of Ospreys is among the most widely distributed of land birds, ranging from north of the Arctic circle to the Cape Colony of Africa, to the temperate regions of South America, and to Tasmania in the Australian realm. It has not yet found its way, however, into some notable places, being absent from Iceland, New Zealand, and various islands of the Pacific Ocean. (It is erroneously attributed to New Zealand by Dresser and Seebohm.) In its wide range, however, there is a slight differentiation, or at least tendency towards differentiation, for the inhabitants of several of the areas over which the genus extends. This differentiation, or assumption based on the facts of distribution, early led to propositions to distinguish as species the types characteristic of the different areas. Thus, for the best known form—that of Europe *Pandion haliaetus* was used; then that characteristic of America was separated (as *Pandion carolinensis*); that of Australia was distinguished subsequently (as *Pandion australis*). Afterwards, these were united under the earliest designation. Later some naturalists, especially the Americans, recognized as subspecies (with trinomial names) the species of the earlier writers. Still later, a reflex wave has set in, and there is now a tendency to again restore the old named species to full specific rank. Besides these, a fourth almost unknown form has been found in the Bahamas and received the specific name *Pandion ridgwayi*.

MIGRATION.

The tenure of occupancy by the several forms varies with latitude, as the result of variation of temperature. In the warmer districts, the bird is a permanent resident, but in the higher latitudes the stay is shortened to a large extent in proportion to the extent and duration of the cold. A few may remain during the winter of the less intemperate regions.

*Descriptions of the Rapacious Birds of Great Britain, 1836, p. 125.

The North American form is constantly represented by individuals in the tropical and subtropical countries, including Florida and the Gulf states. In the southernmost regions, during the summer months, the resident population is reduced to a minimum, but in winter is reinforced by the return of many who had left for a summer sojourn and to raise a family in the countries of strongly contrasting seasons.

Birds make their first appearance at the close of winter; in the latitudes of Philadelphia and New York, about the time of the vernal equinox (20th or 21st of March). "It is reckoned as the first harbinger of the breaking up of winter and of settled spring weather. At first a solitary individual will be seen circling slowly over some creek. In a few days they became abundant".

The departure from the north begins when the weather changes and threatening cold supervenes, and in the inverse order of their advent in the spring. This emigration then commences from the isothermal districts of Philadelphia and New York, about the time of the autumnal equinox. Thus the life of many birds is spent almost equally in their northern and southern homes.

It seems to be generally believed that the males precede the females in their journey northward. Audubon puts the appearance of the females not less than "eight or ten days after the arrival of the males". Mr. Worthington communicated to Bendire the ideas of the lighthouse keeper of Plum island. He "gave the date of the arrival of the Fishhawks as early in April, the time varying but a few days from year to year, the males coming first, followed two or three days later by the females". The reasons for these statements and the evidence on which it was based have never been given.

STATION.

The Osprey living, as it does, almost exclusively on fish, necessarily resorts chiefly to those localities which are convenient to fishing places. Consequently its main resorts are near the shores of the ocean and, to a less extent, interior waters in which fishes abound. Trees add to the attractiveness of a locality although they are by no means indispensable.

It is well-known to be to a considerable extent a gregarious bird in North America. In Europe, however, so far as Mr. Dresser could learn, "the Osprey always nests singly". (See Dresser's *Birds of Europe*, vi, p. 147.)

"The only approach to the gregarious habits of the American Ospreys" which Mr. J. H. Gurney, the well-known authority on raptorial birds, had heard of elsewhere was related to him by "that excellent observer of Australian birds, the late Mr. F. Strange, who informed" him "that on the coasts of Australia three or four pairs of Ospreys are sometimes to be found living in near proximity to each other". (Ibis, 1883, p. 596.)

But certainly one instance of sociability of the European bird is recorded by Seebohm (i. 60). He believed that "the most favourite place of all" for its nest "is on islands covered over with timber in the middle of a lake on which there

are no boats. In a locality of this kind in Pomerania, a number of Ospreys formed a colony, in one case two nests being on the same tree".

The gregarious tendency of the American bird has been abundantly confirmed in various localities: celebrated are the nesting regions of Cape May county, (N. J.) Gardiners island, (N. Y.) and Plum island, (Mass.)

The Plum island colony has been described quite fully in a very interesting article by Mr. C. S. Allen in the *Auk*, (ix, 313-321, 18). "The island is three miles long, east and west, narrow and high to the eastward, broadening to the westward, where is a lighthouse on a high bluff or sand cliff. To the south of this a rolling sandy meadow extends for a mile, some parts of which are nearly level, and others, especially near the beach, form a series of sand hills. Near the center of the island, to the westward, is a swamp, partly clear water, partly boggy and overgrown with bushes, across which was a much used causeway, called Love Lane. Near the swamp, and almost enclosed by it, was a piece of woodland of perhaps twenty acres in extent".

On this small island, the Ospreys were encouraged to settle, and were protected by the principal proprietor of the island. Numerous birds congregated there, occupying neighboring areas. Further details will be found under the caption Nidification.

THE OSPREY A PEACEABLE BIRD.

The Osprey is a very unaggressive bird, especially for a raptorial species; so little aggressive, indeed, that Audubon "never observed a Fishhawk chasing any other bird whatever". He even declared that it was "so pacific and timorous" that "rather than encounter a foe, but little more powerful than itself, it abandons its prey to the White-headed Eagle". This, however, is an exaggerated statement which has been abundantly negated by others.

Wilson had previously recorded that "they no sooner arrive" at their summer or nesting abode "than they wage war against the Bald Eagles, as against a horde of robbers and bandits; sometimes succeeding, by force of numbers and perseverance, in driving them from their haunts, but seldom or never attacking them in single combat".

Mr. Walter Woodman also repeatedly saw it "attack the Night Heron and pursue it for a short distance. There seemed [to Mr. Woodman] to be no reason for these attacks, but the Hawk appeared to be venting his ill-humor upon the poor Heron for want of some other object". The same observer, when in a boat with two companions, saw one "attack some water fowl that was swimming by near its nest. The bird dove, and the Fishhawk hovered about till it reappeared, when it renewed its attack. This performance lasted for a few minutes, and ended by the Fishhawk's desisting from his assaults". (*Am. Nat.*, 1870, p. 559, 560).

Mr. Allen likewise noticed their assaults on Herons, and suggested a possible reason. "In the swamp near the Fishhawk's nest was a colony of Night Herons, nesting in the smaller

trees near the swamp. Almost daily a flock of Crows from Connecticut were accustomed to rob this heronry, covering the ground with the shells of the eggs they had eaten, and occasionally treating a few Fishhawks' nests in the same way. The Fishhawks seemed to unjustly accuse the Herons of the robbery, as the Herons were constantly persecuted by the Hawks. Whenever a Heron appeared he was instantly set upon by one or more of them, and the Heron would seek safety in the thick underbrush where the Hawks could not follow them. Herons were killed, however, almost daily by the Hawks".

The Osprey, it has been claimed, may even under very exceptional circumstances, attack for food and eat other birds or chickens, as will be recorded under the section in which its food is considered.

FLIGHT.

The Osprey is one of the best known of birds. Its abundance in many places, large size, conspicuous appearance, and manner of flight have attracted the attention of all observant residents of the sea shore and river basins. Its behaviour

length, and curvature or bend of wings, distinguishing him from all other Hawks. The height at which he thus elegantly glides is various, from one hundred to one hundred and fifty and two hundred feet, sometimes much higher, all the while calmly reconnoitering the face of the deep below. Suddenly he is seen to check his course, as if struck by a particular object which he seems to survey for a few moments with such steadiness, that he appears fixed in air, flapping his wings. This object, however, he abandons, or rather the fish he had in his eye has disappeared, and he is again seen sailing around as before. Now his attention is again arrested, and he descends with great rapidity; but ere he reaches the surface, shoots off on another course, as if ashamed that a second victim had escaped him. He now sails at a short height above the surface, and by a zigzag descent, and without seeming to dip his feet in the water, seizes a fish, which, after carrying a short distance, he probably drops or yields up to the Bald Eagle, and again ascends, by easy spiral circles, to the higher regions of the air, where he glides about in all the ease and majesty of his species. At once from this



OSPREY IN FLIGHT.

in the air is characteristic, and has been well described by Alexander Wilson.

"The flight of the Fishhawk, his manoeuvres while in search of fish, and his manner in seizing his prey are deserving of particular notice. In leaving the nest, he usually flies direct till he comes to the sea, then sails around, in easy curving lines, turning sometimes in the air as on a pivot, apparently without the least exertion, rarely moving the wings, his legs extended in a straight line behind, and his remarkable

sublime aerial height, he descends like a perpendicular torrent, plunging into the sea with a loud rushing sound, and with the certainty of a rifle. In a few moments he emerges, bearing in his claws his struggling prey, which he always carries head foremost, and, having risen a few feet above the surface, shakes himself as a spaniel would do, and directs his heavy and laborious course directly for the land."

(To be Continued.)

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An Illustrated Magazine of Popular Ornithology.

Published Monthly.

By

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Comments.

SWAINSON CORRESPONDENCE.

In the last number of the *OSPREY* (p. 13) the announcement was made that the Linnean Society of London had recently secured a large collection of letters from various writers to Swainson covering a number of years, and that the president of the society, Dr. Albert Günther, would use them as the basis for his next annual address. The number of the "Proceedings of the Linnean Society of London" during its "112th session", containing that address, has now been received in Washington. The address was delivered at the "anniversary meeting" held "May 24, 1900," and is entitled "The unpublished correspondence of William Swainson with contemporary naturalists (1806-1840)." The correspondence is really of contemporaries with Swainson rather than Swainson's own letters. The address covers eleven pages (14-24) and is followed by a "Catalogue of the Swainson correspondence in the possession of the Linnean Society" extending over 36 pages (25-61).

The accumulation of letters in question, it seems, was offered to the society some time in 1899, and "the council, after much deliberation, decided to secure documents which throw much light upon the life, character, and work of the men to whom we are indebted for the progress made by natural science in [Great Britain] during the first forty years of the present century." The sum of £50 (about 250 dollars) was agreed upon as the price of the manuscripts and three of the fellows of the society contributed that sum and a fourth "promised to defray the cost of the binding so that the correspondence will be on the shelves of the [society's] library free of charge to its exchequer." It appears, then, that the correspondence is now accessible and in good shape for reference. We are certainly much indebted to Dr. Günther for thus arranging it, and for his valuable commentary on it. It is replete with interest to ornithologists generally, and especially to American ornithologists.

Dr. Günther remarks of this correspondence:

"The letters are generally in a good state of preservation, considering that they accompanied Swainson to New Zealand, where they were kept for half a century before they were returned by one of his daughters to England, to the care of Sir Joseph Hooker. The writing has faded and, in a few letters, has become illegible. There are 934 of them, written by 236 correspondents, only 15 being drafts of letters from Swainson. They are dated from the year 1806 to 1840, thus extending over the entire period of his scientific activity. The numerical proportions in which they are distributed over the several years show that the collection before us must be a fairly complete representation of Swainson's scientific correspondence. There is, however, one year, viz., 1832, in which the collection is evidently mutilated; only four letters bear that date, and they are from writers whose names commence with B, so that there can be no doubt that the greater portion of the correspondence of that year is lost. Also for the years 1835 and 1836 only a few letters are in existence; but this can be accounted for by the death of Swainson's first wife, whose loss was a sad blow to him, greatly impairing his powers of application to original work. The thought of emigrating and freeing himself from the ceaseless toil of his numerous literary engagements originated at that period."

Dr. Günther has misnamed two of the men indexed in the Swainson correspondence—Geoffroy Saint-Hilaire and L'Herminier, both

very distinguished naturalists. This is rather remarkable in view of that gentleman's knowledge of the personality of European naturalists, which is unquestionably great.

Three letters are entered under the name "*Sz. Hilaire, Geoffroy.*" The family name of the naturalist in question, however, was GEOFFROY Saint-Hilaire. From the absence of any other name it may be assumed the correspondent of Swainson was Étienne (1772-1844), celebrated formerly for his morphological ideas and his disputation in 1836 with Cuvier, which excited the lively interest of Goethe. Geoffroy Saint-Hilaire was addressed generally in social intercourse as M. Geoffroy only and Cuvier frequently referred to him in print even as M. Geoffroy. His son, Isidore (1805-1864), little less celebrated than the father, was quite helpful to Swainson during his visit to Paris. Swainson remarks "M. Isidore Geoffroy, in particular gave up to me his own little study in the museum." This leads us to note that Dr. Günther, apparently, did not know of Swainson's autobiography. Anyway, he has not alluded to it, and only consulted the biographical notice in the Proceedings of the Linnean Society for 1856.

Among the letters are a number (five) apparently from Ferdinand J. L'Herminier to the Rev. Landsowne Guilding from 1813 to 1819. These have been brought together under the name "Herminier G.," in the "Catalogue," but in his address Dr. Günther, correctly probably, treats of them as by "Ferdinand L'Herminier," and pays a deserved tribute to that most meritorious but neglected investigator. He aptly alludes to him as "a man of wide and sound information, and an accurate observer, who afterwards made himself known by his researches into the ossification of the Avian sternum." We may add that his memoir published in 1827 on the classification of birds based on their sterna was greatly in advance not only of any taxonomic work on birds published up to that time, but for many years afterwards. It was, for example, far—very far—in advance of the final classification published by Swainson in 1836-37. The proper place for his name in an alphabetical arrangement is under L and not H. Under L, HERMINIER his contributions are cata-

logued in the Catalogue of the Royal Society and other reliable bibliographies.

The ornithologist Bonaparte, it may also be noted, is called by Dr. Gunther "C. Lucien" Bonaparte. He varied his name considerably, but never wrote out in full the middle element at the expense of the first one, that is, he never called himself C. Lucien Bonaparte in print at least. In his first papers he used only the name Charles Bonaparte; later he adopted the style Charles L. Bonaparte; in many he spelled in full the first and second names, varying the form according to the language—French or Italian. In his communication to the Transactions of the Linnean Society of London (1837) he only used the initials C. L. The well-known Lucien Bonaparte of the second generation was a younger brother—Louis Lucien Bonaparte, born 1813—as well-known in philological science as Charles was in natural science. Charles (born 1803) commenced his long scientific career in the United States with a memoir on stormy petrels in 1823, and his ornithological work up to 1830 was published in America.

The American correspondents of Swainson were John Abbot, the entomologist; John James Audubon; his son, Victor Gifford Audubon (1834); J. D. Clifford of Lexington, Ky.; William Cooper of New York; Stephen Elliott of Charleston; Samuel Stehman Haldeman of Philadelphia; Richard Harlan of Philadelphia; John Jay, the conchologist of New York; Isaac Lea of Philadelphia; John [E.] LeConte, then of New York; George Ord of Philadelphia; Titian Ramsey Peale of Philadelphia; Constantine Samuel Rafinesque; John T. Sharpless of Philadelphia; Lyman Spalding of New York; J. Stewart of New York; John Torrey of New York, and William Wagner of Philadelphia. There are also letters from R. Haines as Secretary of the Academy of Natural Sciences of Philadelphia, (23 April 1830,) and C. C. Sheppard, Secretary of the Quebec Literary Society, (19 Nov. 1836,) announcing Swainson's election as corresponding or honorary member of the societies. Almost all of these were well-known naturalists of the second quarter of the century. Philadelphia, it will be seen, was the city from which most wrote. Boston, strangely enough, was not represented by a correspondent.

Letters.

RECENT SALES OF AUDUBON'S WORKS.

The question has been asked, "What is the current price at which Audubon's great work on the Birds of America, and his Ornithological Biography can be purchased or sold for?"

The answer must be, in the first place, it depends very much on the condition of the copy. A slight defect, such as a stain on a plate even, will detract materially from its value in the eyes of those who generally buy books of such magnitude. To go extensively into the question would call for more time and space than we can spare. We give, however, some points that will interest our correspondent and other persons who delight in Auduboniana. These points relate to the prices of three works:—

1. The Birds of America, published from 1827 to 1839 in 4 volumes, elephant folio, with 435 plates.

2. Ornithological Biography, which is really the text to the preceding, published from 1831 to 1839, in 5 volumes, 8vo.

3. The Birds of America, first octavo edition, published from 1840 to 1844 in 7 volumes, at New York.

The original elephant folio edition, it is said, has brought as much as \$2,500. We have not been able to confirm this statement from the data at hand and by no means vouch for it. The most recent record for the United States at present available is of a copy with the 435 plates, and including the Ornithological Biography, that sold for \$1,250, (Bangs, Feb. 6, 1896). A copy was sold in 1892 at London (by Sotheran) for £345 (about \$1,725).

A partial collection of the plates (259) was sold at the sale of Dr. Hewetson's library for £30 (\$150) to Quaritch.

The Ornithological Biography may sometimes be bought for considerably less than \$20 although copies in good condition generally command more. Two were sold in 1899 for \$18.75 and \$17.50 respectively. One in the original cloth binding was sold (1896) for \$26.50. In England fine copies bound in calf realized as much as £6 to £10; at the Aylesford sale (1888) £10.

On the other hand, a copy was sold at the Pollard sale ("5 vols., uncut") to Quaritch as low as £1; at the Hewetson sale in 1899 one brought £3 (\$15).

The first issue of the 8vo. edition brings generally between 200 and 250 dollars or somewhere near those figures at auction. At the last sale recorded (Bangs, Jan. 15, 1900.) a copy realized

only \$176.75 but had the "text somewhat spotted." Another was sold at the Cox sale, (Bangs, April, 1899) for \$241.50. One at the Ives sale (1891) sold as high as \$252. At other sales, copies were knocked down for \$189 (1897), \$192.50 (1895), and £40 or \$200 (1890).

On this occasion we cannot go into further detail or give information about the other editions. EDITORS.

BROWN'S EDITION OF WILSON'S AND BONAPARTE'S AMERICAN ORNITHOLOGY.

Another question asked is, where can a copy of Brown's reproduction of Alexander Wilson's and Bonaparte's American Ornithology be found?

It is added that no copy can be found by the inquirer, but one is reported to have been sold at auction some years ago in New York. All libraries consulted, including the British Museum, reported that no copies are owned by them.

The work referred to is entitled "Illustrations of the American Ornithology of Alexander Wilson and Charles Lucien Bonaparte, with the addition of numerous recently discovered species and representations of the whole Sylva of North America. Edinburgh and London, 1835."

We take the title from the Catalogue of the Library of the Zoological Society of London. Agassiz and Strickland, in their *Bibliographia Zoologiae et Geologiae*, give a somewhat different one—after Bonaparte substituting "With all the new discoveries and the addition of the whole Forest Sylva." It is also dated 1835. Finally, the same work is catalogued in Engelmann's *Bibliotheca Historico-Naturalis* (1846) as "Illustrations of Wilson's American Ornithology. No. 1. 5 plates in fol. Edinburg 1831.—5s—colour. 1£ 1s."

Does this mean that the work was issued in numbers with varying titles? Again, does this mean that there are two issues with different title pages or simply that in one case a description has been substituted for the words of the title?

As just indicated, there is a copy of the work in question in the Library of the Zoological Society of London. We know of no other. The work must be very rare. It is not entered in Sabin's Dictionary of Books relating to America.

We shall be glad to receive further information from any person and publish in connection with more that we have in hand in a future number.—EDITORS.

Notes.

ABUNDANCE OF QUAIL OR BOBWHITE.

Sportsmen are looking forward to the general opening of the Quail season November 1 with interest more animated than for several years past, for the reason that reports from all sections favored by the renowned game birds are to the effect that the covers are unusually well supplied.

The effects of the memorable blizzard were very disastrous so far as Quails were concerned, as well as otherwise, and it was at first believed that it would require years for them to become plentiful again. Last spring a year ago hundreds of pairs of Quails were secured in the west and brought to the storm swept east in order to increase and multiply. Very few couples, how-

ever, appeared to breed, and last fall and winter shooting in the vicinity of Washington was scarcely worth the seeking. Owing to the poor returns for the time spent in the field few men attempted to enjoy sport, and consequently what birds there were in the covers were left undisturbed to a very large extent.

That the imported birds bred progenies this year is an undeniable fact, proven by many instances. One gentleman secured ten dozen Quails, equally divided as to sex, in May, 1899, and liberated them on his country place in Maryland. Diligent hunters for a couple of days last November failed to find more than twenty Quails altogether in the covers where the birds had been let out. Last summer, however, young coveys became prominent by their number, and a recent trip of investigation with two pointer dogs lasting a forenoon resulted in eleven fine bunches being found. Similar conditions have been shown in other places where the Kansas birds were released last year, and apparently disappeared, proving that they have bred this year beyond doubt. The coveys are large in number and unusually well developed in size for this time of the year. The spring and summer could not have been better in a climatic sense for the birds, not only in the immediate vicinity of Washington, but in Virginia, Maryland and the greatest of all Quail centers, North Carolina, as well. The dry summer was particularly good for the Quails, and sportsmen will also reap benefits from it, as the cover is not so thick as formerly and movement in the field will be easier for man and dogs.

Reports from all sections of North Carolina are to the effect that coveys are more numerous than ever known before, and from points on the Atlantic Coast Line and Southern railroads the news comes that the supply is apparently inexhaustible. Both railroads have appreciated these conditions by issuing books especially for sportsmen, replete with information of value to those who anticipate shooting in the old north state.—*Evening Star*.

A MOCKING ENGLISH BLACKBIRD.—The Blackbird of England is a member of the same restricted genus (*Merula*) as the common Robin of the United States, and that which is true of one, in a general way, is apt to be true of the other. A remarkable case of mimicry by the European bird has been recorded recently by Jeanne E. Schmahl in *The Spectator* of London for August 4th. The mimicry recalls the allied Mimine or Mocking birds rather than the less gifted Thrushes. It will be interesting in connection with its relation to the American bird. We may add that another case of mimicry by the same bird was recorded in a previous number of *The Spectator*.—EDITORS.

The faculty of imitating sounds and songs not their own must be more frequent in Blackbirds than is generally supposed. I remember in the spring of 1879, in the little copse on the side of the Frauenberg, at Fulda, hearing several Blackbirds sing a fragment of the well-known "Du bist verrückt mein kind." They all sang the same first few notes, breaking off with exactly the same quavering, hesitating sound, beginning over and over again. I tried to find out how they had acquired this addition to their usual natural repertoire, but could not, until an old lady explained to me that the Blackbirds on the Frauenberg must have learned the air from a tame bird belonging to a soldier, which had been taught by him to warble this tune. I saw this Blackbird in a cage hanging over the cottage door, but I did not hear it sing. I have observed another instance of this faculty of acquisition this year in the Parc de Montsouris in Paris. We have been interested in noticing one particularly good-voiced bird singing quite differently from his fellows. It seemed sometimes as we listened in the quiet of the early dawn or late evening as if the bird were trying to invent a new song; it may be he was only imitating. Anyhow, our attention was called to the performance of this particular bird of the difference from the usual Blackbird's song.

SLAUGHTER OF BIRDS BY STORM.—On the night of August 12, after northeast Kansas had been sweltering without rain for over thirty days, the creeks were drying up and the farmers were beginning to grumble about a "drouth," a big black cloud loomed up over the northern horizon. Horton was treated to a display of electrical fireworks, and then the wind began to blow. A lull followed, and Horton went to sleep. At about 1 o'clock people living along the creek south of town found water suddenly rising on the bed room floors, and in one instance a man carried his wife through the water waist deep to high ground. The dam which held the town water supply gave way; bridges and culverts were swept out, and all this in about forty minutes. Monday morning ex-Mayor Leverton discovered a dead bird in his path, and a closer scrutiny showed more. A neighbor was called to witness, and a pail full were picked up. More neighbors arrived and took a hand in the unique harvest. Coal scuttles, wash boilers, pails and baskets were brought and filled. Sparrows, Wrens, Blackbirds, Robins and every feathered tenant of the grove was represented. One woman picked up 161 birds without moving in her steps. When the count was made it disclosed 1,800 birds.—*St. Louis Globe Democrat*.

Literature.

The reviews already set up must be deferred to the next number. Among them is a notice of "The Life and Letters of Thomas Henry Huxley."

CHANNELS CONNECTING DISMAL SWAMP WITH TRIBUTARY MORASSES ON THE WEST.





THINLY TIMBERED PORTION OF MAIN SWAMP AREA

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Original Articles.

A TRIP TO THE DISMAL SWAMP.

By PAUL BARTSCH, Washington, D. C.

In the middle of June, 1897, a party of five, of which I was a member, paid a visit to the Great Dismal Swamp of Virginia. We camped in the hotel at the mouth of Jericho Ditch, on the edge of beautiful Lake Drummond, and spent a week full of enjoyment and profit in this little frequented home of solitude.

The pleasant memories and perhaps the desire to add a specimen of that rare Warbler, *Helinaia swainsoni* Aud., which inhabits this region, to my collection, prompted a second pilgrimage to the shores of the dusky lake and it is of this second trip that I wish to speak.

On the eve of the 2d of June, 1899, Mr. William Palmer, Chief Taxidermist, U. S. National Museum, and myself embarked on the Washington and Norfolk Steamer Norfolk, and arrived at the city of the same name the following morning. Our steamer was somewhat late, and failing to make connections, we were obliged to take a somewhat later train for Suffolk than we had intended; however, we finally reached this place where our supplies for a week's trip were to be purchased.

I wish I might devote a chapter to Suffolk and describe the effect this little city produces upon a man from the energetic north or west, but I fear this would require more space than is allotted to the entire sketch - hence, suffice it to say that here the automobile has as yet not superseded the oxcart; nor the desire for wealth, and the power of the almighty dollar closed the hospitable doors of its inhabitants to the stranger, nor diminished the native's love of leisure. Quaint historic Suffolk! even you, like your gloomy neighbor, have charms all your own, and your memory invites again and again a closer and longer acquaintance.

We supplied our commissary department with everything that experienced hands deem necessary for such a trip as the one we were about to undertake, and did this to an admirable degree, forgetting only that most needed article, the staff of life - our bread.

After a drive of some two miles through a country devoted largely to truck gardening, we reached Jericho Ditch, one of the three possible entrances to the swamp, and by two o'clock p. m. we were ready to push off, down the canal, for the lake ten miles to the southeast.

Profiting by our former experience, we had this time chosen the little flat bottomed, double-bowed boat in preference to the clumsy, heavy, water-soaked, hollowed-out log, ordinarily termed "dugout," which caused us no end of trouble in '97, due, no doubt, in a large measure to a lack of training on the part of the occupants. Whatever the craft, there are but two ways to propel



THE START.

it; one by means of the paddle, the other by pole, each method requiring some experience. The ditch is not wide enough to permit the use of oars, and the way is frequently obstructed by sphagnum and other aquatic vegetation. But withal, the ditch is a dream of a place, and I long to be there again! Now that the memory of hardship and toil have faded in part, or at least, have moved into the background, the pleasure of its beauty stands out all the more charming and vivid, and I can imagine myself

reclining in comfortable ease while Uncle Joshua, that dusky dweller of the lake, slowly and with measured stroke drives my canoe silently through the long aisle toward the enchanting lake on trip number three.

Voices of familiar birds greeted us on every hand; the swamp is filled with musical sound. There are the notes of the Maryland Yellow-throat, the Yellow-breasted Chat, and the ever noisy White-eyed Vireo, greeting you and calling to you long before you push your canoe from its moorings, and as you proceed down the canal, still other familiar sounds will reach your ear, for the fauna of the adjacent region mingles strongly with the birds which are confined to the Swamp proper, and such notes as those of Prairie Warbler and the Chewink will linger for a long time.

For some distance the heavy timber has been cut away and brought out from the swamp by way of the ditch, sometimes as floating logs, sometimes as sections ready to be cut into shingles or fence posts, as is the case shown in the accompanying illustration, and frequently



LOGGING.

as the finished article itself. Both Washington and Jericho Ditch were made with no other end in view than to reach the valuable timber of the region and bring it to market. Formerly a tow-path was kept in repair on one side of the canal, but to-day this has been reclaimed by swamp vegetation, and in many places all traces of it have vanished. For a number of miles therefore we do not have heavy timber bounding the canal, but a dense almost impenetrable second-growth of brush and shrubbery, which extends its branches and vainly attempts to overarch this watery way. On these arching branches the Acadian Flycatcher finds a place where he may place his nest and cradle his young, away out of reach of the many reptiles which infest the region. This bird is a very abundant summer resident throughout the swamp, and its peculiar note is an ever conspicuous feature of the ditch. Its relative, the Great Crested Flycatcher, is also present, and its note is always more or less in evidence, but yet the Acadian outnumbers him at least ten to one. Here and there the banks of brush give place to heavy beds of fern extending for some distance where the soil of the towpath furnishes them a

foothold. Not unfrequently, too, the sides are bordered by a rank growth of cane, a welcome retreat of the Yellow-throat. This bird assumes more and more the characters of the Florida variety *roscoe* as one gets deeper into the interior, and I have found it necessary to bestow this varietal name upon the specimens taken about the lake and the surrounding country. These forms are easily distinguished from typical *trichas*, even in the field, on account of the differences in their notes. The specimens, however, are not typical *roscoe*, but belong to a form intermediate between true *trichas* and *roscoe*, favoring the variety more than they do *trichas*.

The two most characteristic birds of the swamp make their appearance soon after one sets out from the landing, becoming more and more abundant as one approaches the lake. These are the two Swamp Wood Warblers, the Prothonotary and the Hooded, both abundant summer residents of the region. I can think of no fairer picture than such as we beheld on many an occasion during our stay. A narrow, straight, clear, glossy, stretch of dark colored water, bounded by vegetation so rank that it appeared like a veritable wall, with a strip of clear blue sky above and perfect reflection beneath; so perfect in fact, that you will turn the photo taken, over and over before you will satisfy yourself as to which is its correct position? Here green Smilaxes (*rotundifolia* and *laurifolia*) bound the whole which in places consisted largely of Swamp Azalea (*A. viscosa*), Wild Cherry (*P. virginianus*), Swamp Huckleberry, (*V. stramineum*), and that splendid shrub with its pendent racemes of showy waxwhite flowers (*Leucothea racemosa*) all decked with fragrant blossoms at this season while their shady bases were enconced in stockings of green moss among which sparkling Sundews might be seen or perhaps a colony of that pretty Orchis (*Pogonia ophioglossoides*), peeping forth from its deep green setting with beauteous blush of pink, while midst the Sphagnum of the ditch dwelt harmoniously the delicate little Bladderwort (*Utricularia vulgaris*), raising on slender pedicel its tiny, delicate, rosy cup of a blossom up above the watery home of its submerged stem. It is amongst scenes like these that I learned to appreciate the beauty of the Golden Swamp Warbler most, for here indeed, his brilliant plumage seemed in accord with its surroundings. As he appeared for a moment like a blazing meteor passing down this gorgeous aisle to be swallowed up the very next by the sheltering wall of foliage, or perhaps as sometimes happened a pair would be observed in full chase, then indeed is when the Prothonotary Warbler appears at his best, for extreme animation is added, and the effect of the white in his tail feathers comes into play.

He is at all times a sprightly fellow, full of activity and music, and considerably on the wing, gliding rapidly from one place to another, rarely rising high above the lower vegetation, for he is essentially a bird clinging closely to the proximity of mother earth and water, and yet he is truly arboreal. In his movements he differs from all his relatives. He does not

possess that gleaming nature characteristic of so many members of his family, but seeks his food upon and among the abundant decaying moss-covered logs and stumps, which have been accumulating here for ages, flitting from one to another, and extracting from them the insect food constituting his daily fare. Here again we must pause and comment upon his beauty. For

what fairer picture could one imagine than a Prothonotary clinging to a moss-covered cypress knee, perhaps only a foot above the water, with his head partly lowered and tilted as if gazing and admiring the reflections of his brilliant form in the enchanting scene mirrored beneath.

(*To be Continued.*)

NESTING OF THE INCA DOVE IN RAMOS, STATE OF SAN LUIS POTOSI, MEXICO.

By JOSIAH H. CLARK, Paterson, N. J.

The Inca Dove (*Scardafella inca*) is a very common permanent resident in the western part of the State of San Luis Potosi, Mexico. It seems to be more a bird of the town than of the country, and the corrals seems to be its favorite place of resort. The females begin nesting here (which is at an altitude of about 8,000 feet) the last week of March, the young, one or two in number, leaving the nest about April 23, and by the first of May they will have their second set of eggs. They usually rear three broods, if not more, a season.

When nesting they are very tame, and frequently will almost permit you to place your hand on them before leaving the nest; often they will raise up while on the nest, permitting you

to see the eggs, setting down again as you start to go away.

Their favorite nesting place here is on the turned up leaf of a Nopalo Cactus; on which they place a few loose sticks, and line the nest with a few grasses, for the second brood they use the same nest only adding more of the grasses or lining material.

The eggs are white, and elliptical oval in shape. One set of eggs taken May 4, 1899 (this was their second set for the year) measures .90 - .65 and .89 - .65 inch. Nest five feet from ground.

Another set taken June 1, 1899, measures .86 - .63 and .86 - .65 inch.

WILLIAM SWAINSON AND HIS TIMES.—VII.

By THEODORE GILL, Washington, D. C.

(*Continued from Vol. V, page 10.*)

Many letters passed between Swainson and Richardson while the volume was being written and especially while it was passing through the press. Most, if not all, of Richardson's letters to Swainson were preserved by the latter and are in the Swainson correspondence purchased by the Linnean Society of London in 1900. The first of Richardson's letters in the collection is dated Chatham, 18 June, 1829, and the last relative to the Fauna Boreali-Americana, London, 14 October, 1831, the time thus intervening being about two years and a third. Swainson seems to have been somewhat urgent for payment; the publisher for the government, John Murray, "complains of the expenses" to Richardson and even writes a couple of letter direct to Swainson (7 and 17 Dec., 1829) on business matters. Richardson frequently urges greater expedition on the work; he also early (8 July, 1829) complains that he "is scarcely reimbursed for his own" but later (24 Sept., 1829) "sends Swainson £61;" he then was preparing his descriptions of the birds which were at first very detailed. This detail was so great that Swainson remarks against it and Richardson (24 Oct., 1830) promises to take his "advice and abridge his descriptions." Richardson is very courteous and even deferential to Swainson; he confesses that he is "not versant in the mode of forming Latin names from the Greek" and applies to Swainson for information!

Swainson as an adviser in the formation of Latin or Greco-Latin names reminds one forc-

bly of the parable of the blind leading the blind. If Richardson did not know then, he subsequently developed considerable aptitude in the formation of such names and proposed many good ones. In his dealings with Swainson, however, he not only defers to him, but at last (13 April, 1831) we find him "generously offering to S. to give S's name as the authority for all new species". In his last letter of the period (14 Oct., 1831) we find that he declares "The Birds of the Faun. Bor.-Am. all but completed."

The only other letter from Richardson to Swainson preserved by the latter was written nearly ten years later (15 Feb. 1840), on the eve of Swainson's departure from his native land; in this he "excuses himself for not adopting S's generic names, and bids him farewell."*

Swainson evidently appreciated the liberality of Richardson's treatment and was very complimentary to him. In his notice of Richardson in his "bibliography of zoology" (Taxidermy, etc., p. 308) he even went to the extreme of falsifying the record and referred to the volume of the "Fauna Boreali-Americana" on which they were collaborators as "The Birds, by Richardson and Swainson;" he also records in the ornithological bibliography of his "Natural History and Classification of Birds," (i. 218,) the same work as by "Richardson and Swainson," although he gives the proper sequence in the detailed title. In the latter work (i. 218) he likewise notes that "the whole of the descriptions, and nearly all the synonymes, are entirely from the pen of Dr.

*The quotations in this section are, of the notice of Swainson's letters by Doctor Gunther in the Proceedings of the Linnean Society of London 112th section, (p. 52-53,) and not of Richardson's own words.

Richardson; and we may, therefore, be permitted to express our opinion, in the words of another writer, that "they are models of perfection."

This work may be properly designated as a great one. Dr. Coues† expressed the opinion that "the influence which this work exerted cannot well be overstated. It occupied in the present century the place previously filled by the works of Edwards, Forster, Pennant and Latham, so far as the birds of America north of 49° north latitude are concerned; for forty years following its publication, it was the chief source of inspiration of numberless writers on the same subject, and it continues to be a standard authority."

It was a complement rather than a rival to the works previously published or in the course of publication on the Birds of North America, for those related chiefly or even almost exclusively to the species occurring further south, in the United States. Wilson's "American Ornithology" had already become almost old having been published seventeen to twenty-three years before and the nomenclature adopted therein was that of the Linnæan school. Bonaparte's "American Ornithology," a continuation of Wilson's, was almost complete, three volumes having been published (1825-28) but the fourth did not appear till two years later (1833). Audubon's Atlas ("The Birds of America") was being carried through the press; the first volume of 100 plates had already appeared (1827-30) as well as the first plates of the second, but the completion did not see the light till 1838. Audubon's text ("Ornithological Biography") began to appear in the same year, the first volume bearing the date 1831, but was not completed till nine years later (1839). There was thus remarkable activity in the publication of expensive ornithological works at the time—especially remarkable when the population of the United States is considered. The recent census (1830) had revealed a number less than thirteen millions (12,866,020). The number of amateur ornithologists or those interested in birds was comparatively small—far less in proportion than at the present time. We can not but admire, then, the boldness which the publishers of the works in question showed in undertaking them without subsidies. The "Fauna Boreali-Americana," however, was subsidized by the English Government and, as the title-page indicates, "published under the authority of the right honourable the Secretary of State for colonial affairs" by John Murray. The scope of the work has been so well indicated by Coues that his description may be accepted rather than a new one which would not be better.

"The work has a twofold character—it is an account of the Birds of the Fur Countries, interspersed with contributions from Mr. Swainson to general ornithology—the latter in the shape of disquisitions, foreign to the scope and purpose of the book, upon the quinary, miscalled the natural, system; wildly speculative articles which, though in the fashion at the time, add considerably to the bulk of the volume without

perceptibly increasing its value, and are chiefly noticed now because they include several new tenable generic names.

"Dr. Richardson's Introduction (pp. i-xl), constituting a treatise by itself, opens with a historical sketch of the subject. The collections made on the Arctic coast during the voyages of Ross and Parry are described along with those made in the interior on the Franklin expeditions which Dr. Richardson accompanied. The circumstances under which the latter were made are detailed, and the general character of the avifauna is sketched. Various elaborate tables follow, displaying the several categories of species, their movements, etc. The remainder of the Introduction is occupied by Mr. Swainson, *more suo*; the Preface is from the same hand, though it is less distinctively quinary. The body of the work treats formally of 238 species, giving detailed descriptions, miscellaneous biographical items, and considerable synonymy, together with the foreign disquisitions above commented upon, which are discontinued, however, at page 342. The nomenclature, as well as the classification, appears to be Mr. Swainson's for the land birds; for the rest, Temminck's Manual is followed. The minute descriptions suffice for the identification of nearly every species of the work, while Swainson's plates have long been famous for their faithfulness both in drawing and coloring; copies vary, however, in the latter respect.

"The following appear to be new names, (some of extralimital species), described for the most part by Mr. Swainson, some being, however, by Dr. Richardson, and two or three by the authors conjointly:

- Accipiter mexicanus*, p. 45.
- Buteo (Circus) cyaneus?* var.? *Americanus*, p. 55.
- Lanius excubitorides*, p. 115.
- L. elegans*, p. 122.
- Tyrannus borealis*, p. 141.
- Tyrannula pusilla*, p. 144.
- T. richardsoni*, p. 146.
- Cinclus Americanus*, 173 [altered name from *C. mexicanus* of 1827].
- Orpheus meruloides*, p. 187 [renamed from confessedly before-named species].
- Sialia mexicana*, p. 202.
- Erythraea (Sialia) arctica*, p. 209.
- Vireo Bartramii*, p. 235.
- V. longirostris*, p. 237.
- Emberiza (Plectrophanes) picta*, p. 250.
- Emberiza pallida*, p. 251.
- Pyrgilla (Pipilo) arctica*, p. 260.
- Linaria (Leucosticte) tephrocotis*, p. 265.
- Garrulus brachyrhynchus*, p. 296.
- Picus auduboni*, p. 396.
- Picus (Apternus) arcticus*, p. 313.
- Tetrao Franklinii*, p. 348.
- Tetrao (Lagopus) leucurus*, p. 356.
- Tringa Douglasii*, p. 379.
- Limosa Edwardsii*, p. 398.
- Scelopax Drummondii*, *S. Douglasii*, and *S. Braziliensis*, p. 400.
- Larus Hutchinsii*, p. 419 (note).
- L. zonorhynchus*, p. 421.

†Birds of the Colorado Valley, p. 616.

THE OSPREY OR FISHHAWK; ITS CHARACTERISTICS AND HABITS.—II.

BY THEODORE GILL, Washington, D. C.

Continued from Vol. V, p. 28.

THE NEST AND EGGS OF THE AMERICAN OSPREY FOUND AT PENOBSCOT BAY, MAINE.
(Photographed by Ora W. Knight.)

"If the wind blow hard, and his nest lie in the quarter from whence it comes, it is amusing to observe with what judgment and exertion he beats to windward, not in a direct line, that is, *in the wind's eye*, but making several successive atcks to gain his purpose. This will appear the more striking, when we consider the size of the fish which he sometimes bears".

Audubon thought that "the motions of the Fishhawk in the air are graceful, and as majestic as those of the Eagle. It rises with ease to a great height by extensive circling, performed

apparently by mere inclinations of the wings and tail. It dives at times to some distance with the wings partially closed, and resumes its sailings, as if these plungings were made for amusement only. Its wings are extended at right angles to the body, and when thus flying, *it is easily distinguishable* from all other Hawks by the eye of an observer accustomed to note the flight of birds. Whilst in search of food, it flies with easy flappings at a moderate height above the water, and with an apparent listlessness, although in reality it is keenly observing

the object beneath. No sooner does it spy a fish suited to its taste, than it checks its course with a sudden shake of its wings and tail, which gives it the appearance of being poised in the air for a moment, after which it plunges headlong with great rapidity into the water, to secure its prey, or continue its flight, if disappointed by having observed the fish sink deeper".

WALK.

On the ground the Osprey is as ungainly as in the air graceful. It seldom alights, "and when it does so, walks with difficulty, and in an extremely awkward manner. The only occasions on which it is necessary for them to alight", says Audubon, are "when they collect materials for the purpose of repairing their nest at the approach of autumn, or for building a new one, or repairing the old, in spring".

MEAL TIMES.

Naumann has attributed regular meal times to the Osprey in Germany and specified a breakfast at 8 to 9 and a "midday" (mittags) or early afternoon meal between 12 and 2, the bird seldom fishing meantimes. No such regularity has been noticed in the United States nor has any approach to it been mentioned by American authors. Nevertheless, as Naumann was a good observer, attention should be directed to the movements of the bird in order to ascertain whether there is any basis of fact for the statement.

FOOD.

The food consists almost if not quite exclusively of fishes, and these are always caught by itself. Only under stress of great scarcity of the normal diet would one be likely to take anything else. The toes and claws—especially the reversible outer toe which distinguishes it from all the other diurnal birds of prey—admirably fit it for the capture of the objects of its pursuit. The kind of fish or the size matters little to it; the chief requisite is that it shall approach near enough to the surface to be pounced upon and that it be not too large to be taken out of the water nor too small to be grasped. The species will consequently vary with the locality, season, and nature of the water. Along the coasts, when the various species of the herring family—shad, alewives, menhaden, etc.—approach the mouths of rivers or advance into them, they are often the most readily obtainable. When the shoals of mullets seek the coast and invade the estuaries, there is another opportunity offered for the feasts of the Osprey. One of the very few English synonyms has been suggested by its onslaught on the mullets—Mullet-hawk. In the fresh waters, when the salmonids and suckers crowd into the smaller streams, they are the ones most likely to fall prey to the bird. In Florida, according to Major Bendire, "they live almost entirely on catfish." The same authority believed that the fish caught "are usually the inferior species, such as are seldom used for the table." It is

not at all likely, however, that its tastes are so convenient to man. The bird is not a wife to the universal Jack Sprat. The limitation of the species in Florida to catfish could only have been for a time and under certain conditions. But catfish often occur under such conditions, frequently ascending to the surface of the water to inspire atmospheric air, and are so lethargic in their habits, that they are quite apt to fall an easy prey to the bird. Professor Bartsch, in a recent number of the *OSPREY* (v, p. 6) remarks: "It may seem strange, but every fish which I have seen the Osprey catch about Washington, and have been close enough to determine has proved to be catfish. I have several times surprised the bird into dropping his prey by approaching the spot where he was enjoying his catch unnoticed, and each time have found it to be a catfish." The bird of the mountains and lakes often regales itself with a trout or whitefish.

The weak-fish of the eastern American coast, a savory esculent scianid of the genus *Cynoscion* (*C. regalis*), is a fish which is specially connected with the Osprey in some places. Audubon's figure of the bird represents it flying off with a weak-fish in its claws, and in one of his episodes he declared that he inquired "if the Fish-hawks were plentiful near Great Egg Harbor, and was answered by an elderly man, who with a laugh asked if [he] had ever seen the 'Weak-fish' along the coast without the bird in question."

CAPTURE OF FISH.

The manner of grasping fish has been described by Professor Newton. One "in the Gardens of the Zoological Society of London, when a fish was given to it, was observed to seize it across the body, placing the inner and outer toes at right angles with the middle and hind toes, and, digging in the claws, held the fish most firmly by four opposite points, not relaxing its hold or altering the position of the toes, but picking out the portions of flesh from between them with great dexterity."

Whatever the fish taken, the bird treats it in the same manner. "It is a curious fact," it has been thought, that it "will never carry the fish with the tail to the front." Wilson early observed that the fish was always carried head foremost. Mr. Charles S. Shick watched it often in Cape May County, (N. J.) where it is very common, and "many times" saw it "turn the fish around in mid air" so as to carry it with head advanced. It would be desirable to have such a change of position "in mid air" confirmed by others. Meves wrote to Dresser that, in northern Russia he "saw an Osprey flying from Lake Ladoga to a neighbouring wood with a fish in his claws. It held the fish by its head, and the whole of the hinder part stuck up in the air, higher than the bird's back, looking like a flag."

Its mode of capture has been described by Audubon. "When it plunges into the water, in pursuit of a fish, it sometimes proceeds deep enough to disappear for an instant. The surge caused by its descent is so great as to make the

spot around it present the appearance of a mass of foam. On rising with its prey it is seen holding it head foremost.

Its mode of descent on the fish has been described very recently by Professor Bartsch (*OSPREY*, v, p. 6.) "The Osprey does not shift its center of gravity when it poises above the water as does the Kingfisher, whose body changes almost to a vertical from the horizontal position as he prepares for a plunge. Neither does the Osprey dive headfirst as does the Kingfisher; but he plunges into the water with wings extended widely upward; clutching his prey with his powerful outstretched talons."

This manner of precipitating itself upon a selected fish is characteristic of the Ospreys, and not manifested by the true fishing Eagles. The "Large Gray-headed Fishing Eagle" of India, *Haliaeetus ichthyactis*, for example, has been especially described (by Blanford) as "not pouncing down on them like an Osprey, but to swoop upon them "in its flight."

Having captured a fish the bird, as was observed by Audubon, "mounts" a few yards into the air, shakes the water from its plumage, squeezes the fish with its talons, and immediately proceeds towards its nest, to feed its young, or to a tree to devour the fruit of its industry in peace." That journey towards nest or tree is, however, often interrupted by the onslaught of an Eagle or perhaps a Frigate bird.

Audubon considered that "the Fish-hawk differs from all birds of prey" in an "important particular, which is, that it never attempts to secure its prey in the air, although its rapidity of flight might induce an observer to suppose it was perfectly able to do so." He spent "weeks on the Gulf of Mexico" where these birds were numerous, and observed them "sailing and plunging into the water, at a time when numerous shoals of flying-fish were emerging from the sea to evade the pursuit of the dolphins. Yet the Fish-hawk never attempted to pursue any of them while above the surface, but would plunge after one of them or a bonitafish [bonito], after they had resumed their usual mode of swimming near the surface."

AS TO DEMAND FOR FRESH FISH.

It has been strenuously asserted that the Osprey will not only never take a dead fish, but will not even condescend to go after one that it has dropped. Controversies have been held on these points in weekly journals devoted to sport, as *Forest and Stream*. (See e. g., Volume vii, p. 23, p. 276, 357; viii, p. 1, 3, 4, 113, 224, 300.)

Audubon "observed many of these birds at the approach of winter, sailing over the lakes near the Mississippi, where they feed on the fish which the Wood Ibis kills, the Hawks themselves being unable to discover them while alive in the muddy water with which these lakes are filled. There the Ibises wade among the water in immense flocks, and so trample the bottom as to convert the lakes into filthy puddles, in which the fishes are unable to respire with ease. They rise to the surface, and are instantly killed by the Ibises. The whole surface is sometimes

covered in this manner with dead fish, so that not only are the Ibises plentifully supplied, but Vultures, Eagles and Fishhawks come to participate in the spoil." Audubon adds that "except in such places," he had "not observed the Fishhawk to eat of any other prey than that which it had procured by plunging headlong into the water after it."

Mr. S. C. Clark a well-known writer in *Forest and Stream* (vii, 276), has narrated another incident. When fishing "on Halifax River" in Florida he "caught a Seacat of three or four pounds weight. It was killed in recovering the hook," and was thrown overboard. "An Osprey saw and seized it; as he flew away he was pursued and robbed by an Eagle, who was watching for booty from a tree top. This robber in turn was attacked by another Eagle, who forced him to drop the fish, which he carried away out of sight into the woods."

SIZE OF PREY.

The size of the fish taken is necessarily a very variable quantity, the bird not stopping to measure a fish seen or its strength. Naumann, in his *Natural History of the Birds of Germany* (*Naturgeschichte der Voegel Deutschlands*), very precise in everything, estimated the weight to be between a quarter of a pound and 2½ pounds. It cannot well grasp a very small fish and it is limited at the other extreme by its ability to seize and carry. It has been frequently seen, however, to capture and fly with a fish bulkier than itself, that is, five or six pounds or somewhat more in weight.

The bird, it has been asserted, sometimes "will strike a fish too large to lift; and in such case, unless able to extricate its talons, it is dragged under the surface again and again until it is drowned. Professor Newton states that Mr. Lloyd records one having met with this fate; and Mr. Knox, mentions a case in which the bird, having lauded its prey, was unable to extricate its talons therefrom, and so fell a victim to the crook of a shepherd who had witnessed the capture."

Mr. Dresser saw an Osprey in the Bay of Fundy "strike a fish which it was unable to lift; and after being dragged beneath the surface time after time, and making every effort to release itself, it was at length carried out and disappeared." (Dresser B. E., vi, p. 146.)

Sometimes, at least, this inability to release itself may be the result of a nervous rather than physical cause. At least the bird experiences no difficulty in surrendering its prey to assailants in the form of birds as well as man. Mr. Dresser himself experimented on a pair when in New Brunswick, overlooking men in a shipyard. The Ospreys passed over the shipyard "on their way from the shores of the Bay of Fundy to their nest, which was situated at some distance in the forest;" "several times" he "fired at one with a rifle when it was carrying a heavy fish, and sent the bullet close enough to make it drop the fish."

(To be Continued.)

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Comments.

NEW ORNITHOLOGICAL MAGAZINES.

Three new magazines devoted to popular ornithology have made their appearance with the advent of the new year and century, The Petrel, American Ornithology and The Bittern.

"*The Petrel*" hails from Palestine, Oregon, the last place on earth in which we would have looked for such a bird. It is edited by John William Martin, and is promised to be a monthly visitor. The first number is a neat copy, consisting of sixteen pages, 8vo., containing a number of very readable articles, and is prettily illustrated by halftone reproductions of photographs. We extend our best wishes to this strayed member of the family.

"*American Ornithology*" is edited and published by Chas. K. Reed of Worcester, Mass. It is also an 8vo. of sixteen pages, and is chiefly devoted to descriptions and halftone figures of American Birds and their eggs. We believe that this little magazine will prove acceptable

to many teachers, and hence extend it our heartiest greeting.

"*The Bittern*" is published by Glen M. Hathorn, at Cedar Rapids, Iowa, and appears as Vol. 1, No. 1. We received a humble little copy of a predecessor under the same title from the same source in June, 1900, a small 10mo. of eighteen pages, and are pleased to note the increase in size to the regular 8vo. of sixteen pages. The Bittern contains a number of good articles, and is also illustrated by halftones.

SUPERFLUITY OF ORNITHOLOGICAL MAGAZINES.

Almost if not quite every year, for many years, at least one new magazine devoted to popular ornithology has been started and often more than one. The question naturally arises, *cui bono?* for what new purpose or end is it intended? As a rule, those who start the new magazines are very young and think they have some special information which the world ought to possess, but for which there is no mouthpiece. They want to see themselves in print—they overflow with a zeal to make themselves heard. They believe the world will be eager to hear them. All they have to deliver may be given, however, in one or two numbers. They then become exhausted of intelligence, and perhaps of money, and the new journal dies of inanition; occasionally a few more numbers are issued—generally much to the detriment of their own pockets and the patience of themselves and their friends. This form of mania at least in its virulent form is mostly confined to the United States. In other countries it is very little developed.

Doubtless a certain enjoyment and some intellectual exercise are derived from the form of divertissement in question; nobody is seriously injured, as a rule, and we have no good reason to object. The cost may inconvenience some of the projectors, but it may be regarded as an outlay for education. The only one to seriously object is the bibliographer. How shall he treat these numerous candidates for popular favor? Shall he consider all the notes and articles contained in them seriously or ignore them? Once in a while a newly discovered isolated fact or feature is made known or a long known one shown up in a new relation. To go through all the great mass of verbiage to discover such, however, involves much loss of time. So say some of the older ornithologists! Let us hope, however, that any such consequences may be offset by the pleasure derived by the projectors in their work or amusement—whatever you will!

Notes.

LONDON'S BIRD TRADE is treated of in a recent number of the *London Mail*. The figures are very interesting, especially those relating to the import into America of Robins. Comparatively few, so far as we can learn, come into the United States. Perhaps most go to Australia. EDITORS.

The birds to which the majority of people are devoting their attention at this festive season of the year are those which are hung up or laid out attractively in the windows of 'poulters' shops. There are other kinds of birds, however, that cause a considerable turnover in money in the course of the year. Vast numbers of Robins, for instance, are caught and sent abroad.

The number of Robin redbreasts (*Erythra rubecula*) that are exported from this country to the United States, Canada and Australia during the year reaches a total of nearly 25,000, and they fetch about £18,000. A few Starlings are included in these figures, as it has been found impossible to obtain separate statistics; but the great majority are Robins.

Among singing birds, at least 500,000 Canaries find purchasers in this country in the course of a year, representing in cash £120,000. Fully a quarter of these come from the Tyrol and certain parts of Germany, where in some little villages Canary breeding is practically the only industry. The largest number of Canaries bred in England is by a firm in the neighborhood of Norwich, which disposes of 20,000 per year, the value of which is about £5,000.

Piping Bullfinches are also largely of German importation, the best districts for these being Hesse and Fulda.

About 40,000 trained Bullfinches come into this country every year from Germany and Russia, and their value, taking one with another, is over £100,000.

The Chaffinch is a very common bird in England, so common that it can be bought in the street for sixpence, but in Germany there is a variety whose song is very highly esteemed. A few have been brought over here and sold at £4 each, but the climate does not apparently suit them.

Larks and Linnets are actually to be bought for twopence each from the men who net them, but a dealer usually charges at least a shilling for them. Blackbirds, Thrushes and Goldfinches usually cost more, about a couple of shillings, although they may be got for sixpence first hand.

The largest price obtained for a British wild bird is £10, for a perfectly white specimen of a Blackbird.

PRICE OF CURIOUS ANIMALS IN THE WORLD'S BIG MARKET. There is no branch of the animal kingdom, nor any corner of the world, that is not ransacked and explored nowadays for the purpose of collecting natural history curiosities to supply the commercial demand. Special expeditions are sent to remote and almost inaccessible regions to gather strange and rare ani-

mals, for which the market is as unfailling as for any staple product of the soil or the factory. Firms dealing in such merchandise in a large way are located in most large cities, both in this country and abroad, and, judging from the comprehensiveness of their catalogues, it would seem as if there was nothing that flies or walks or swims that they are not prepared to furnish on short notice at list prices.

One of these catalogues advertises a large assortment of "live material," as it is termed. From this document one learns that he can obtain large bullfrogs at \$3 a dozen, alive and kicking; medium sized bullfrogs are cheaper, costing only \$1.75 for twelve. Turtles are \$2 a dozen for "adults," and small ones for aquaria are offered for 15 cents each. Pond snails, "in assorted lots," are listed at 25 cents a dozen; crayfish cost \$1 a dozen, and newts are 15 cents each. In ordering crayfish it is requested that a few days' notice be given in which to secure them, in case the stock should be low. No such reservation, however, is made in the case of earthworms, which come at 60 cents a dozen. It is safe to say that any small boy will furnish earthworms under this rate.

It will be understood that all the above animals are shipped alive. The catalogue quotes small alligators at 50 to 75 cents apiece. Live rattlesnakes come higher—especially the diamond rattlesnake which costs from \$5 to \$12. Economical persons, however, may prefer a ground rattlesnake at \$1. The copperhead is supposed to be about as deadly as the rattlesnake, and may be obtained for \$2, while chicken snakes, king snakes, and garter snakes sell as low as 50 cents each.

Crabs are not offered alive, but in alcohol, and in this shape one can buy sand crabs, blue crabs, spider crabs, fiddle crabs, mud crabs, and hermit crabs at prices running from 10 to 75 cents apiece, spider crabs being the dearest. Insects, similarly preserved, are so cheap as to tempt purchase. Squash bugs cost only 50 cents a dozen, while giant water bugs come at only half that price. Earwigs are quoted at 50 cents a dozen, ant lions at 10 cents each, crickets at 50 cents a dozen, seventeen year locust at 10 cents apiece, and June bugs at 50 cents a dozen. Horse flies invite the buyer at only 10 cents the fly, "true wasps" may be obtained for the same price, and bumblebees foot the list at 6 cents.

In London, which is the great bug market of the world, auctions of insects are held every year, and startling prices are paid sometimes for rare specimens. As much as \$800 has been brought by a single butterfly, while an out of the way beetle may be valued at many times its weight in gold.

Hamburg is a great market for wild animals, largely from Africa, that city having an important trade with the Dark Continent. To London came much material of the same sort from Australia and New Zealand, and many rare creatures are obtained from sailors who fetch them from various parts of the world. An American dealer, not very long ago, made a special trip to

White Bay New Zealand, for the purpose of procuring a kind of lizard called "sphenodon," which is regarded by scientists as a wonderful curiosity, inasmuch as it is the only survivor of an entire order of reptiles, all the other genera and species having long since become extinct. This lizard, which is known to the native Maoris as the "Tuatera," is about a foot and a half long, and, oddly enough, seems to have affinities with the crocodile. Of course, all the kangaroos, wombats, and flightless birds come from Australia, or New Zealand. A while ago the American dealer above referred to made a special trip to South America for the purpose of obtaining guanaco skeletons and steamer ducks. The guanaco is chiefly interesting, because, like the llama, it is a representative of the camel tribe on the continent. The steamer duck is particularly odd, inasmuch as it flies when it is young, but cannot do so after it has matured. The adult bird beats the water with its wings as it swims and this suggested the name given to the species at a period when all steamers were side wheelers. It cannot rise in flight, for the reason that, as it gets older, its wings do not develop in proportion to its increase in weight. —*Philadelphia Post*.

RELATIVE STRENGTH OF EAGLE. Cornelius K. G. Billings of Chicago is the millionaire owner of the English yacht *Surf*. The *Surf* was struck by a railroad float last Tuesday night, and is now undergoing repairs in a South Brooklyn shipyard. Just before this accident Mr. Billings had been on a cruise up the Sound. While on this trip the *Surf's* sailors captured a large bird that proved to be an American Eagle. The sailors feared that their American skipper would object to keeping the Eagle in captivity and hid the bird in the hold until they returned to this city.

The bird was placed in the cellar of Henry Meyer's grocery store at Twenty-sixth street and Fifth avenue. John Meyer son of the groceryman, was detailed to look after the bird until the Englishmen sailed for home next week. The boy fastened a chain to one of the bird's legs and chained it to the wall. A barber named Angler has a shop near Meyer's store and owns a fox terrier named Spot. Spot succeeded in gaining an entrance to the cellar yesterday morning; and in a few minutes the groceryman thought there was an explosion under his place. The fox terrier and the Eagle had engaged in battle and wine bottles, jams, preserves, and other dainties were scattered in all directions.

The dog was badly beaten, being almost blinded by the Eagle's sharp claws, but another dog came to his aid and the two resumed the attack, which resulted in the Eagle's death. Young Meyer arrived during the fight, but did not take sides. When asked about the fight he would only say in German: "Big Eagle bun fighter." —*The Sun*, N. Y.

"SOME ANIMALS EXTERMINATED DURING THE NINETEENTH CENTURY" is the title of an article by R. L. [Robert Lydekker] published in *Nature* for January 10, 1901, (p. 252-254). Of birds, those commented on are the Great Auk, the Black Emu (*Dromaeus ater*), the Spectacled Cormorant (*Phalacrocorax perspicillatus*) of Bering Sea, the Great White Water-hen (*Notornis albus*) of Lord Howe and Norfolk Islands, the Tahiti Rail (*Prosobonia leucoptera*), the White-winged Sandpiper (*Hypotaenidia pacifica*) of the same islands, the New Zealand Crane (*Coturnix novaezelandiae*), a beautiful Pigeon of the island of Mauritius (*Alectroenas nitidissima*) called *Pigeon hollandais* on account of the plumage presenting the Dutch colors, the Kaka or Philip Island Parrot (*Nestor productus*) and a related Norfolk Island species (*Nestor norfolcensis*), a Parraquet of the island of Rodriguez (*Palaeornis exsul*), the Labrador Pied Duck (*Camptolaemus labradorius*), the Crested Pied Starling (*Fregilupus varius*) and the Black and Gold Mamo of Hawaii (*Drepanis pacifica*). This list might be greatly added to and more will be enumerated in a future article for the *OSPREY* on Birds exterminated during the Nineteenth Century.

We may here note that the Labrador Duck was still living as late as 1871 or 1872; in one of those years Dr. George Bird Grinnell (Editor of *Forest and Stream*) saw some in course of preparation by a taxidermist at the residence of the late Mr. George A. Boardman of Calais, Maine. They had been recently bought in open market in New York.

THE DEATH OF CHARLES C. MARBLE is noted by the *Luk*. He was editor of our contemporary magazine entitled "Birds" and a resident of Chicago since 1893. He died in that city September 25th, of heart disease, at the age of 52 years.

THE DEATH OF DR. JOHN ANDERSON occurred at Buxton, England, in August last.

Dr. Anderson was born in Edinburgh, Scotland, in 1833, studied medicine, and received the degree of M. D. from the University of Edinburgh in 1861, was immediately afterwards appointed Professor of Natural Science in the Free Church College of Edinburgh, resigned the professorship in 1864, and then went to India. He had been appointed Superintendent of the Indian Museum at Calcutta, and he retained this position till 1887. Meanwhile, he conducted various scientific expeditions to different parts of India or neighboring lands, and published valuable reports on the zoological and anatomical results, including ornithology. He also contributed to scientific periodicals several special articles on birds, especially Asiatic species. His latest researches were prosecuted mainly with reference to a work on "The Fauna of Egypt".

Literature.

A MANUAL OF THE VERTEBRATE ANIMALS OF THE NORTHERN UNITED STATES including the district north and east of the Ozark Mountains, south of the Laurentian Hills, north of the southern boundary of Virginia, and east of the Missouri River, inclusive of marine species. By David Starr Jordan, President of Leland Stanford Junior University. Eighth Edition, Newly Revised and Enlarged. Chicago. A. C. McClurg & Co. 1899. [16mo., title leaf - i-vi - 5-379 pp.]

Although late in the day for review, the last edition of President Jordan's Manual has only recently come to hand and some features deserve notice. It is the only complete and reliable summary of the vertebrates of the region indicated that has yet appeared. Its popularity and usefulness may be measured to some degree at least by the number of editions—eight that have already appeared. Each one has been more or less fully brought up to date.

In the words of the author, "the present edition is printed from the same plates as the fifth edition, published in 1890. The decade which closes the century has seen greater activity in the study of species of animals and their relation to their environment than has been known in any other corresponding period in the world's history. Such study has given much greater precision to our knowledge of the characters and the distribution of species, with the minor results of the recognition of synonyms, and the correction of nomenclature by its establishment on the solid basis of priority.

"Most of the recent changes in the scientific names of animals are due to the use of the earliest name given to the species, instead of some later one applied through error of one sort or another. The changes required have been made on the old plates."

In the great group or subkingdom of vertebrates, otherwise "Chordata," nine classes have been adopted, but the first two of these—Tunicata and Enteropneusta—are excluded from the plan of the present work." The remaining or true vertebrates are distributed among four "provinces" or superclasses and seven classes. "The relations of these provinces and classes are shown in the following analysis taken, in part, from Dr. Gill's 'Arrangement of the Families of Fishes.' Only the more obvious characters are here mentioned."

The class of "Aves (The Birds)" is revised to follow the generally accepted nomenclature of the American Ornithologists' Union. The 711 species and 218 genera are diagnosed in 102 pages (212 to 313) and distinctively enough as a rule to enable the student having the necessary skill and judgment to determine any bird of typical adult character by means of the tables and definitions.

In an "Appendix of Birds" peculiar to the present edition (p. 362) dissent in one respect is expressed from the code adopted in the body of the work for the nomenclature of the species. Dr. Jordan there remarks: "By the agreement of the American Ornithologists' Union a small

number of names of genera are set aside because they are nearly but not quite identical with other names of earlier date. This I have followed under protest. The only practicable rule in such cases in my judgment is to regard any two words as different unless *actually spelled alike* regardless of the questions of etymology. In my judgment the following earlier names should be restored:

"458. *Eremophila* Boie, instead of *Olocoris*, p. 276.

"511. *Helminthophaga* Cabanis, instead of *Helminthophila*, p. 298.

"512. *Parula* Bonaparte, instead of *Compsothlypis*, p. 299".

There is now a difference of opinion between ornithologists with respect to the rule in question, but there is, at least, a tendency among them to accept the rule formulated by Jordan. The present reviewer decidedly agrees with him, but assent is to be regarded as an individual, and not an editorial expression of opinion.

We need only add that the volume is without illustrations, and is neatly and strongly bound.

NATURE'S CALENDAR. By Ernest Ingersoll. A Guide and Record for Outdoor Observation in Natural History. With twelve illustrations from original photographs by Clarence Lown. New York and London: Harper & Brothers Publishers. MCM. [12mo. xii, pp. 11 - 270 pp. 12 pl.—\$1.50.]

As to the aim and purpose of this volume, we may let the author speak for himself.

"Observation is at the basis of all scientific work, and is itself both a Science and an Art, although, after all, it is nothing more mysterious than the faculty of keeping open at the same time both the eyes and the mind.

"This little book does not pretend to teach it—perhaps no book can do that. It does attempt, however, to save your valuable hours and fleeting opportunities by reminding you from time to time throughout the circle of the year what is doing then in the living world, by giving you a memorandum of some things for which you ought at that moment to be on the lookout, lest their brief period pass before you learn or remember that this is their appointed season. In this respect it is a guide to study out of doors—a calendar of Nature's annual cycle of birth, career, death, and progeny—seed, blossom, fruitage.

"The dates given refer to an ordinary season in the region about New York City. It was necessary to take some one district for the sake of relative uniformity, but the limit has not been strictly drawn, and the book will be found useful throughout the eastern half of the United States and Canada—at least, since an observer anywhere may act upon its suggestions, quickly learning how to make local allowances for his own circumstances of latitude and climate. In doing so he will begin to understand the pleasure of his work, and will call it play."

The birds are brought into special prominence and the time of occurrence, arrival, departure

and nesting of the more conspicuous species noted. A wide margin (nearly the whole outer half of the width of a page) is left for the use of each owner of the work.

The author's notes will serve to call attention to what may be observed or looked for and thus similarities as well as contrasts may become manifest. Undoubtedly there are many to whom such a volume will be of use.

THE WOODPECKERS. By Fannie Hardy Eckstorm. With illustrations. Boston and New York. Haffin and Company. The River side Press. Cambridge. 1899. [Square 12mo., 131 pp., 5 pl. and text figures. \$1.00.]

In this little book the author charmingly sums up our knowledge of this small family, setting forth the good and evil characters of its members and their most interesting life histories and habits in so simple and pleasing a manner free from all technicalities, that the merest amateur, and especially our boys and girls for whom it is particularly intended, will be able to digest its entire contents without the slightest difficulty. We feel confident that the book will accomplish its mission that of stimulating an interest in our birds and natural history.

The book consists of an interesting "Foreword: The Riddlers," followed by sixteen chapters devoted to "How to Know a Woodpecker;" "How the Woodpecker catches a Grub;" "How he courts his mate;" "How he makes a house;" "How a Flicker feeds her young;" "Friend Downey;" "Persona non Grata" (which gives a rather severe account of our pretty Yellow-bellied Sapsucker); "El Carpintero" (a chapter devoted to discussion of the California Woodpecker); "A Red-headed Cousin;" "A Study of acquired Habits." The next four chapters are devoted to "The Woodpecker's Tools;" "His Bill;" "His Foot;" "His Tail;" "His Tongue;" and these are followed by a general consideration of "How each Woodpecker is fitted for his own kind of life, and lastly, by "An Argument from Design," in which the author pleasingly harmonizes the question of evolution with her own religious feelings. The Appendix (113-27) furnishes a key to and terse descriptions of the 43 recognized North American species and varieties. The final pages (129-131) are devoted to a sufficient index. The five colored plates, portraying the Flicker, Downey, Yellow-bellied Sapsucker, California Woodpecker and the Red-head are fairly good reproductions of paintings by L. A. Fuertes, while the twenty-one text figures were produced by J. H. Ridgway.

LIFE AND LETTERS OF THOMAS HENRY HUXLEY. By his son Leonard Huxley. In two volumes. Vol. I [-II]. New York. D. Appleton and Company. 1900. [2 vols., viz: I, xix, 539 pp., 5 pl.; II, vii, 541 pp., 8 pl.]

The life of the celebrated naturalist is related in this work by his son, and is a very interesting one. Born in 1825, Huxley was educated for the medical profession, entered the naval service of his country, and for four years (1846-1850) served on a surveying vessel (the Rattlesnake) as surgeon and naturalist. The investigations he conducted in this capacity were the founda-

tion of his later fame. His researches covered almost every branch of zoology.

The most fruitful of his studies of birds were made in 1866, 1867 and 1868. From his letters, however, we find that he gave instructions to Herbert Spencer in 1860 on the physiology of the air-cells (see p. 230). A little later, 1861, he was "at work on the chick's skull, part of the embryological work which he took up vigorously this time, and at once the continuation of his researches on the Vertebrate Skull, embodied in his Croonian lecture of 1858, and the beginning of a long series of investigations into the structure of birds" (p. 244).

The relation of Huxley's work to ornithology at that time and the characteristics of his work have been explained in an address of the reviewer on "Huxley and his work" and a section is here repeated.

One of the most persistent prejudices that has influenced the progress of zoological taxonomy has been (perhaps still is) a belief in the importance of superficial adaptation of structure for life in the water contradistinguished from life on the land. This prejudice was long impressed on ornithology. The birds with feet adapted for swimming by the development of webs between the toes or for wading by elongation of the legs were set apart from those fitted mainly for progress on land or through the air; in other words, from those having negative characteristics in such respects. The major subdivisions of those groups, too, were almost solely distinguished by superficial characters of little importance, such as the form of the bill, the character of the claws, and the combination of toes. Variations in such trivial characters, which in other classes of vertebrates would be esteemed of little systematic value, were assigned ordinal rank. Comparative anatomy, too, was almost entirely neglected in the classification of birds; even most anatomists were content to limit their observations to simple irrelative details or to interject them into the framework of existing arrangements. Such was the state of ornithology in 1867 when Huxley published, in the Proceedings of the Zoological Society of London, a memoir "On the classification of birds, and on the taxonomic value of the modifications of certain of the cranial bones observable in that class." In this he discarded the characters generally used and allowed himself to be influenced by the modifications to be found in the skeleton without reference to the habits or habitat of the birds. He reduced the orders to three—the Saurura (extinct), the Ratita, and the Carinata. The last, including almost all the living forms, were divided into primary groups defined by modifications of "the bones which enter into the formation of the palate." "Four different modes" were recognized and were "called, respectively, the *Dromæognathous*, *Schiæognathous*, *Desmognathous*, and *Ægithognathous* arrangement" (p. 425). It was urged that "these cranial characters may safely be taken as indications of natural affinities" (p. 454), and Huxley proposed "to regard these divisions as suborders, and to name them *Dromæognathæ*, *Schiæognathæ*, *Desmognathæ*, and *Ægithognathæ*" (p. 456). The last three suborders

were divided into groups with the termination -morphæ, as Ætomorphæ (Raptores), Psittacomorphæ (Psittaci), etc., not taxonomically designated, but essentially equivalent to "superfamilies." The Ægithognathous "Coracomorphæ" corresponded with the "Passeres" as limited by recent naturalists, and Huxley was "disposed" to divide it "into two primary groups, one containing *Menura*, and the other all the other genera." How the immense aggregate represented by all the other genera were to be subdivided Huxley did not venture to decide, but he leaves the impression that he had little respect for the numerous "families" which had been recognized by most ornithologists.

The value of this work consisted chiefly in disturbing the old classifications and calling attention to the proper method of investigation. Much of it, nevertheless, appears to have been of permanent value, and most of the superfamilies at least have been recognized as natural assemblages, although still generally given ordinal or subordinal rank and endowed with older names. The memoir at least gave an impulse in the right direction—morphological as opposed to teleological—and has incited to many elaborate investigations to the great advantage of ornithology. It had a more immediate and general effect on the subsequent arrangements of the class than any other work.

William Kitchen Parker was a collaborer of Huxley in those days, and did some excellent work on the osteology of birds. He had not equally clear ideas respecting the aims and methods of classification as Huxley, and at one time urged that the Screamer or *Cariama* of South America was related to the Secretary Bird of Southern Africa. Huxley dissented from this view in a letter which has been published in the "Life and Letters", and as this letter gives a fair idea of the style of his correspondence with intimates as well as opinion of some other ornithologists, we introduce it.

ROYAL GEOLOG. SURVEY OF GREAT BRITAIN,
JERMYN STREET, July 17, 1867.

MY DEAR PARKER—Nothing short of the direct temptation of the evil one could lead you to entertain so monstrous a doctrine, as that you propound about *Cariamidae*.

I recommend fasting for three days and the application of a scourge thrice in the twenty-four hours! Do this, and about the fourth day you will perceive that the cranial differences alone are as great as those between *Cathartes* and *Serpentarius*.

If you want to hear something new and true it is this:

1. That *Memora* [sic!] is more unlike all the other Passerines (*i. e.* Coracomorphæ) than they are unlike one another, and that it will have to stand in a group by itself.

It is as much like a wren as you are—less so, in fact, if you go on maintaining that preposterous fiction about *Serpentarius*.

2. Wood-peckers are more like crows than they are like Cuckoos.

Aegithognathæ
Coracomorphæ
Cypselomorphæ Gecinomorphæ
 Desmognathæ
 Coccygomorphæ.

3. Sundevall [Sundevall] is the sharpest fellow who has written on the classification of birds.

4. Nitzsch and W. K. Parker* are the sharpest fellows who have written on their osteology.

5. Though I do not see how it follows naturally on the above, still, where can I see a good skeleton of *Glareola*?

None in college, B. M. S. badly prepared.

Ever yours faithfully,

T. H. HUXLEY.

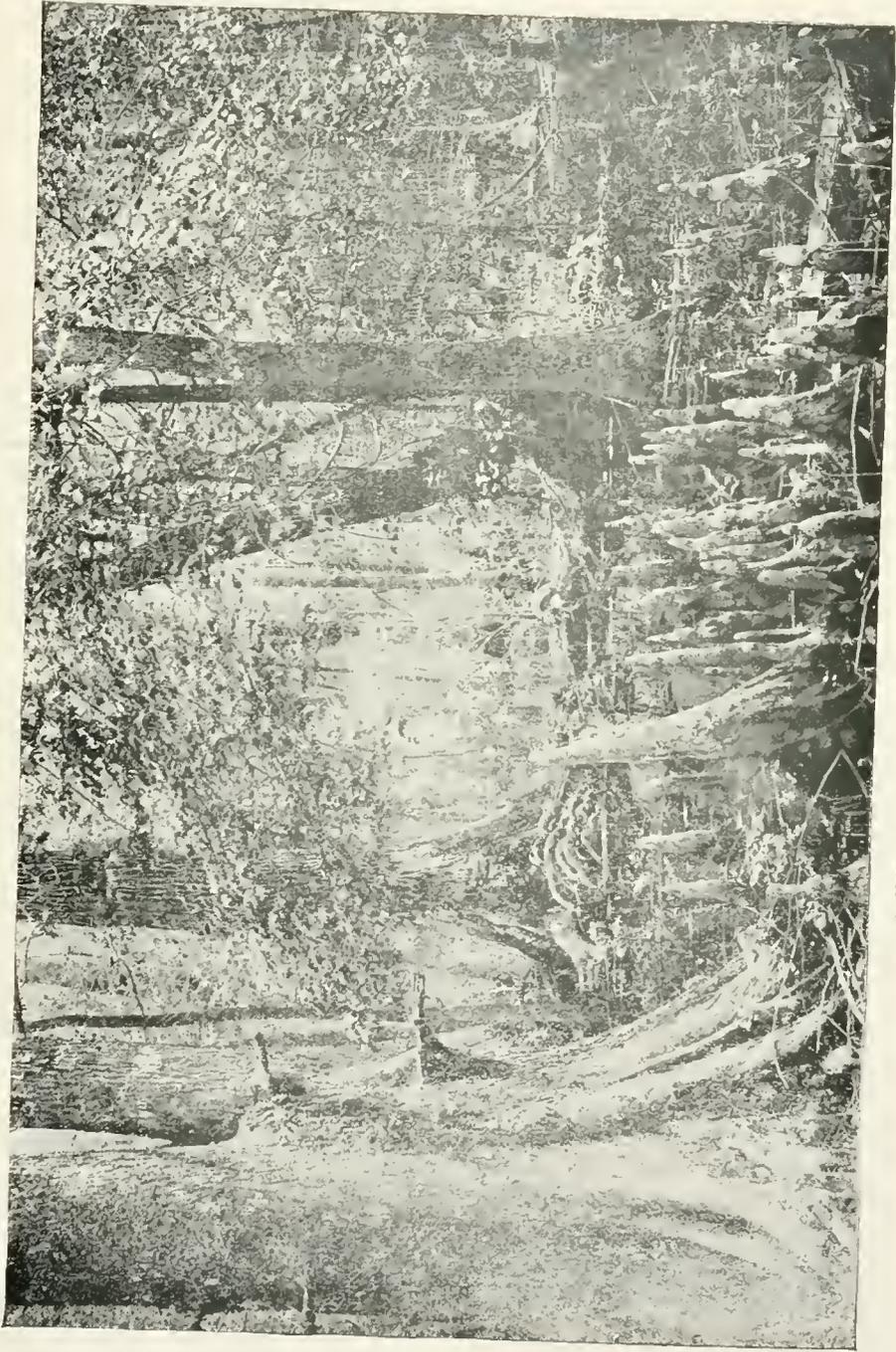
"*Memora*" is a slip of Mr. Huxley or the printers for *Menura*, the Lyre bird of Australia. The "college" referred to is the Royal College of Surgeons. "B. M. S." are the initials of British Museum Skeleton.

The work abounds in most interesting matter and gives the reader a vivid idea of the scientific conditions of during the last half of the century.

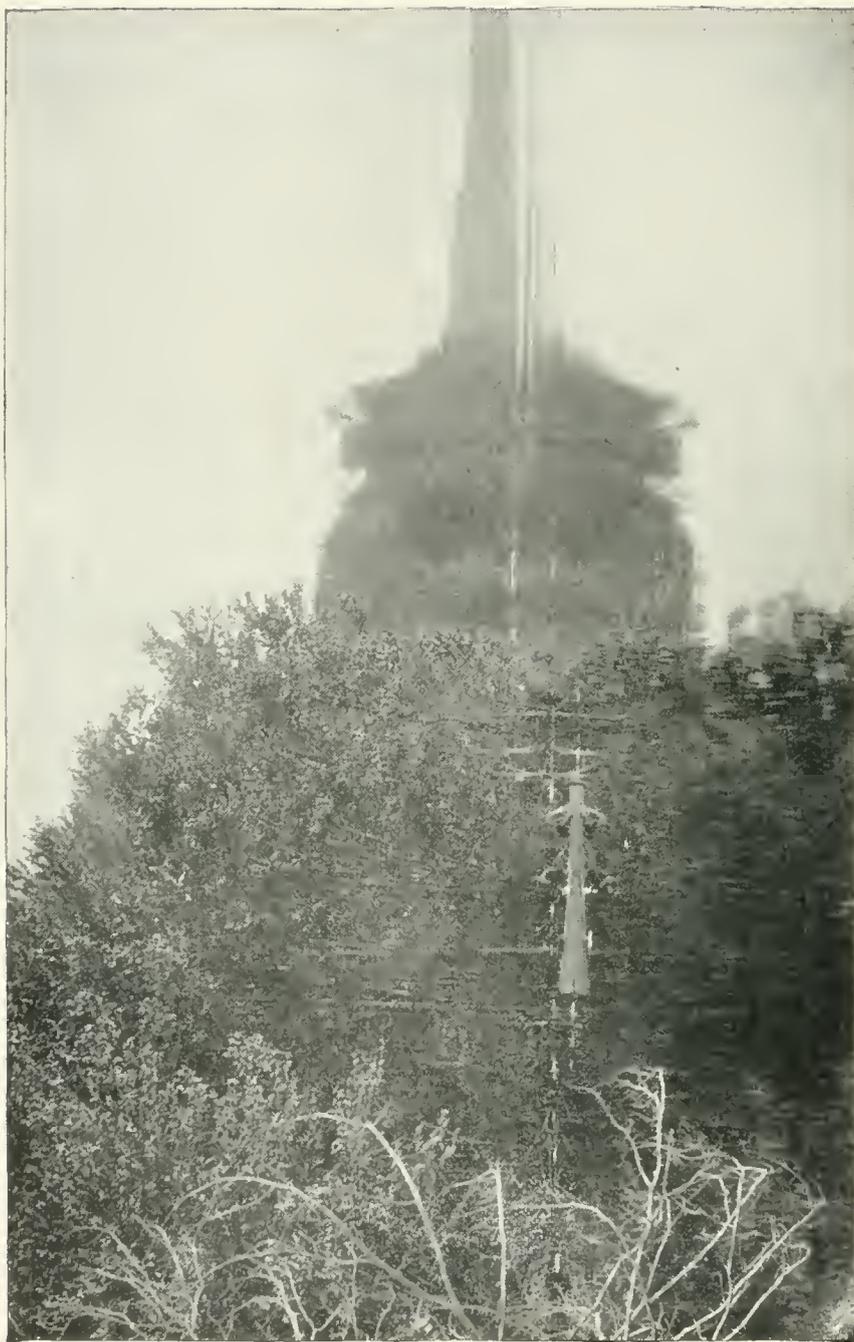
COUES' "KEY TO NORTH AMERICAN BIRDS," we learn from the publishers, is now ready for the press. The new edition was thoroughly revised by the author just before his death, and will be enlarged by the addition of numerous new illustrations. It will be divided into two volumes.

BIOGRAPHICAL NOTICES OF ÉMILE BLANCHARD AND THE MILNE EDWARDS have just been published in the "Bulletin des Nouvelles Archives du Muséum d'Histoire Naturelle" (4 ser., t. ii, 1900). One is entitled "Émile Blanchard.—Notice nécrologique par E. L. Bouvier, (p. ii—xxviii), the other, "Henri et Alphonse Milne-Edwards, (p. xxix—lxiii), is by Edmond Perrier. Detailed bibliographies (but imperfect in specification of pages) are given of the publications of Blanchard and Alphonse Milne-Edwards which will be of use to some ornithologists.

* Except in the case of *Serpentarius*. [Huxley's note.]



A VIEW OF THE INTERIOR OF THE SWAMP.



ALONG THE SHORE OF LAKE DRUMMOND.

THE OSPREY.

An Illustrated Magazine of Popular Ornithology.

Published Monthly.

VOLUME V.

MARCH AND APRIL, 1901.

NUMBER 4.

Original Articles.

PHOTOGRAPHING THE CAPRIMULGIDAE.

By HERBERT K. JOB, Kent, Conn.

(All rights to illustrations reserved by the Author.)

In many a rocky pasture in this vicinity about the last of May or early June, a Night Hawk may be discovered upon some low flat moss-grown rock, incubating her two eggs. As the bird often returns to the same rock, year after year, for this purpose, once having found a few

of these spots, the observer will not lack material for his study.

These birds sit so motionless out in the bright sunshine that, as soon as I discovered the first nest, I thought it would be an easy matter to secure a fine photograph of the incubating bird.



FIG. 1.—THE NIGHTHAWK.

But I found that I could not get near enough to operate an ordinary lens in person, and when I boldly planted the camera upon the tripod, and focussed upon the nest, to make the exposure from a distance, the bird refused to return until the instrument was removed. By another season I had learned the value of caution; so when, on the 4th of June, I found a nest, I proceeded differently. Taking a couple of flat stones from a wall, I placed them five or six feet from the nest, attached the long fifty-foot rubber tube, focussed the camera on the ground an inch or two in front of the eggs, set the shutter for just a perceptible time exposure, the sun being slightly overcast, and, covering the pile with weeds and grass, withdrew. The whole was about a foot high.

This much accomplished, it seemed probable that the bird would bear the camera nearer. So I flushed her, and moved the instrument within two or three feet, arranging it as before. This time it only took the bird five minutes to return, and I soon had the second exposure (Fig. 1), again without startling her. From a rock much nearer than the one previously chosen, she watched me photograph her eggs (Fig. 2), and, as I departed, I had only gone a few steps when she flew back and settled down upon her treasures, henceforth to be unmolested.

In the previous season I had also found a Whip-poor-will's nest, the first I had ever seen. I was exploring a few acres of woods upon a slight knoll, surrounded by pasture-lands, making, as it were, a sort of island. Just as I was



FIG. 2.—THE NIGHTHAWK'S NEST.

Meanwhile the owner was perched on a rock a few rods away. After a couple of minutes she flitted toward the nest, took a turn around the camera, then came to see what I was doing behind the wall, took a few more turns around the nest, and went back to the rock. The circling about the nest was repeated at frequent intervals for quarter of an hour or more, and I began to fear the same outcome as in the previous season. But at length, as she hovered, she suddenly threw up her wings and settled down upon the eggs. I waited a few minutes for her to become composed, then crept up to the end of the tube, and squeezed the bulb, without startling the bird at the click of the shutter.

emerging from the largest trees into a belt of oak scrub, where the track ended at a rail fence, with a ploughing beyond, suddenly a Whip-poor-will floated airily away from the ground ten yards ahead, and disappeared through the bushes. Back in the timber I had started another bird from a prostrate log, then from a rock, and had been looking for a nest. Where this second bird started was a little opening in the scrub into which the sun beat down warm, and a small pile of old brush. Just beyond this, two yards from the fence, I at once espied a beautiful egg, lying in the hollow of a great leaf, without any preparation whatever in the way of a nest. (Fig. 3). This was the 5th of

June. I came again the next day, and the companion egg lay beside its mate. After photographing the eggs in situ, I took them for my cabinet. In ten days, (June 16th,) it was but the work of a few minutes to flush the bird from a similar spot, near another brush heap in the scrub, about fifty yards from the first location, where two fresh eggs lay upon the dry leaves.

The other bird, probably the male, I found, whenever I visited the place, dozing on that same log. The ground beside it was well decorated with droppings and stray feathers. The bird would invariably return to the log as soon as I withdrew.

Wondering whether the pair would be constant in their affection for the locality, and return to it another season, I visited the spot

near the ground by means of a screw-bolt and ball and socket clamp, propped the whole with sticks, making ready for an exposure of one-half second, with wide open lens. Then having previously attached the tube, covering all but the lens with brush, I withdrew, carrying the end of the tube and bulb with me to the open field, to which it would just reach.

I went elsewhere for an hour, then crept cautiously into the woods, and at length stood up on the tree-trunk, about ten yards from the nest. At first I could discern neither bird nor eggs. But after careful study, with the aid of the field-glass, I made out the form of the bird, wonderfully harmonizing with the surroundings, apparently asleep upon the nest, her head drawn back upon her shoulders. So I withdrew, went



FIG. 3. THE WHIP POOR WILL'S NEST.

next year on the 1st day of June. The bird was not near the first site, but hardly had I approached the other than away she went, not out of sight, as before, but to the prostrate trunk of a great tree near by, that had been blown down during the winter. There were the two eggs on the dry leaves, shaded more by shrubbery than before, on the other side of the brush-heap, not ten yards from the old site.

This year my ambition did not stop at photographing nests, and I must fain try for a picture of the Whip-poor-will herself. After due consideration of the problem, I leaned a fragment of a broken limb against the crotch of a sapling, tied it steady, screwed the camera to it

around to the bulb, and squeezed it. The bird flew only as I went to the camera. There was no time for me to stay longer for another exposure, so I drove home, and developed the plate that night. To my great disappointment, it was hopelessly under-exposed, and the most careful examination did not disclose anything that resembled a Whip-poor-will.

After photographing the Night Hawk, as above, three days later I drove around to try the Whip-poor-will again. She was at home, and I set the camera up very close to the nest, adopting the same plan as before, but setting the shutter for its longest automatic release, one second. The sky was clear, moreover, while

before the light was dull. This time I peered from the log after twenty minutes had elapsed, and there was the bird, as before, side to the camera. Whether or not this exposure was successful, the reader may judge. (Fig. 4). At first I thought it was not, for it was some time

Night Hawks and Whip-poor-wills; but two days after the last recorded events, I started for the Magdalen Islands, and did not return till after the youngsters were all a-wing.

These pictures will throw light upon a mooted point in bird and animal photography, as to



FIG. 4.—THE WHIP POOR WILL.

before I could distinguish the head of the bird in the negative, drawn far back on the shoulders, the eye half closed.

I arranged the camera for another trial, but the bird sat a few feet from the nest, hesitating to return, and meanwhile it was sundown, so I removed the danger, and left my good friend her eggs. The male was not seen at either visit at his accustomed roost, and the presence of numerous Whip-poor-will feathers scattered about (near the log) made me fearful that he had just fallen a prey to some marauding bird or beast.

I regret that I cannot make this little chapter complete by adding the pictures of the young

whether a dull, lustreless eye in a supposed life-picture may properly create doubt as to its genuineness. I have found it to be entirely owing to variations of light as to whether an eye takes well or not. In my two Night Hawk pictures the eye might well have been a shoe-button, as far as appearance is concerned, while in the case of the Whip-poor-will the eye is perfect. The latter was taken in the shade, the former under a hazy, but open sky. The whole thing may be a matter of the poise of the head, of a gleam or a shadow, over which the photographer has no control.

A TRIP TO THE DISMAL SWAMP.

By PAUL BARTSCH, Washington, D. C.

As nesting site, the Prothonotary chooses any convenient cavity. This may be in an old stump a few feet from the ground, or some ten to fifteen feet above it. We even found one neatly tucked away in a hollow made by the twisting of a cypress knee, only a foot and-a-half from its base. The greater number however seem to be placed in small decayed trees at a height easily within the reach of one's hand. It is possible that nests so placed are more conspicuous, and hence more easily noted than others, which would account for the fact, that by far the greater number found were thus situated. In almost every case the stump was decidedly rotten, and one could easily break away the outer protecting wall with one's fingers, if desirable, and thus expose the structure proper, which in all instances consisted of a base, of varying depth, made almost exclusively of the tree trunk investing mosses while the superstructure or nest proper consisted of a neat cup formed entirely of fine rootlets.

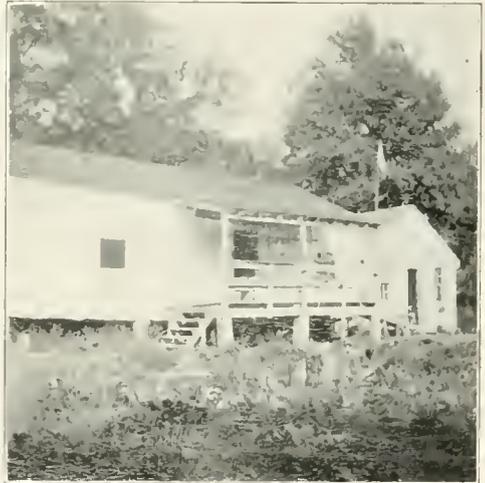
The Hooded is of a wholly different temperament, apparently frequenting all parts of the swamp, and not like the Prothonotary partial to the borders of the large tracts of water. You may find him near the ground or in the tree tops, but usually at an elevation half way between these two extremes. He is of an extremely cheerful disposition and your attention will no doubt be called to him by his notes, for he is ever saying something, as he moves about, searching for his food, repeating it again and again with varied emphasis. The syllables most frequently heard sound something like weee weee wo-ee-tee rendered in a pleasing manner, with the sweetest of accents which belong wholly and alone to our little swamp inhabitant the Hooded Warbler. This bird indeed, more than any another, tends to enliven these scenes, which without avian chorus, would certainly seem steeped in deepest gloom. All the nests which we found of this warbler were placed in crotches of cane, and contained four young. The nest is not a model of architecture; but one well suited for its purpose. Dead leaves of cane to which a few of the oak and other trees were added, composed the rough exterior, the inside or lining being of slender grass stems neatly turned to line the mould.

So much for these two warblers, and now again to our task. We arrived at our hotel toward dusk, and finding no one at home lifted the latch and stepped into the only cabin which commands a view of Drummond's Lake.

The hotel is placed upon a bit of elevated ground on the left side of the ditch, about a hundred yards north of its junction with the lake. Formerly there were two buildings in close proximity, but now the one to the south is gradually being consumed for kindling wood. The main structure, though made of rough boards, is nevertheless built after the most approved sanitary style. First of all it is raised upon sections of logs, some four feet from the

ground, to keep the house from being damp; however light and ventilation are its two strong points, for there are chinks between the boards as well as between the shingles, each of which contributes its little mite to produce an airy whole, to say nothing of the additions which come by way of the places in the windows which seemed to have parted, long ago, with the once embraced glass.

The interior is divided into five compartments. A central one, extending from one side to the other, forming a more or less square space some twenty feet in diameter, serves as kitchen, dining room, library, parlor or whatsoever use you choose to put it to. It is furnished with a long, wide table made of rough board, and a long



THE HOTEL.

wooden bench, on either side of this, an iron stove, which dates back quite a number of years, and a few long shelves on the wall which were destined to hold all the household effects which Joshua called his own. To the north and south of this room are two sleeping apartments, each of which is furnished with a double bunk of spacious size, filled with straw, every stem of which spoke of pressure well applied.

We claimed as our quarters the west side rooms, to the south and north, and were quite comfortably housed, and at peace with our inner man when the shades of night stole softly upon us.

By far the most attractive part of this dwelling is the large porch on its west side, whose outer railing serves admirably well for a back to the board bench which extends its entire length. Here we seated ourselves to rest awhile from toil, and talk over the experiences of the day, while good Mother Nature silently lowered the dusky curtain, and proclaimed a change of scene. How delightful to be seated thus and

watch this gradual transformation of day to eve, to twilight, and dusk to night, each scene bringing with it its own events. The little frog who has occasionally during the day announced his presence by rapping his shingles together, with a vigorous whack, whack, whack, whack, whack, (for indeed there is no sound to which his note might be more properly likened than the forcible rapping together of two shingles,) has now grown quite vociferous. For a little while the Chimney-swifts mingle with the bats in their common pursuit; then the large Dragon flies (*Epiaschna heros* Fabr.) which have been whirring up and down the ditch all day come in to roost beneath the house or underneath its projecting eaves; the Woodcock seeks her favo-

every leaflet is steeped in dew in early morning, and dense fog envelopes everything, rendering the fragrant atmosphere most pleasantly cool. Breakfast over, I took a stroll along the path leading into deep woods back of the house. On our former visit we had paid Joshua to cut this path through the jungle that we might the more easily pursue our way. For some reason he seemed to have taken a fancy to it himself, and to have kept it in repair. A brilliant Redstart flashed his colors and was skipping about the lower vegetation adjoining the building. Maryland Yellow-throats scolded as they moved through the moist tangle. Both were busily intent upon procuring food for their young. After passing some fifty yards back of the house into



NESTING CAVITIES OF THE PROTHONOTARY WARBLER.

rite bog, and the graceful Great Blue Heron sails quietly to his stamping grounds, for such I took the promontory at the junction of the lake and ditch to be; judging from the number of visiting cards he had deposited there. No doubt he comes here to join the frogs in their chorus and note the doings of Uncle Joshua, but he decidedly declined an interview which Mr. Palmer planned a little later.

As dusk deepens to darkness, and the starry orbs one by one appear until their full count has answered to the call of roll, countless fire-flies flash their brilliant torches midst the deep shadows of the woods, until one might well believe himself transported to a fairy-land where Nymph and Dryads are at play. One's voice gradually sinks midst scenes like these until it is lost, and you gaze in silent admiration, and listen to the sounds all attune to-night; peacefully calm and contentedly happy, you dream, and as the hours pass, you people the scenes and would scarcely be surprised if the Lady of the Lake herself would appear "paddling her white canoe."

We were astir early the next morning, and had visited our traps and counted our night's catch of small mammalia, consisting chiefly of *Peromyscus leucopus* and *P. nuttalli*, long before the sun appeared upon the scene. In the swamp

the timber, to where the undergrowth appears as a dense tangle of briars, cane and ferns, I stopped and squeaked; just one note, reminding me of that of the Water-thrush, followed by a swift swish of the wing, and a Swainson's Warbler sat perched upon a slender twig not five feet from me. We gazed at each other for a moment; then he departed as suddenly as he had come. His position, manner of flight and attitude reminded me strongly of that of the lesser thrushes. This and another equally close and short glimpse were all that I managed to see of Swainson's Warbler on this trip. The bird is very shy and seclusive, and though I visited the locality again and again, and squeaked my most seductive squeak till my throat was hoarse and sore, I failed to call him from his hiding. I knew he was present, for his sweet clear burst of melody, pure as that of the Water-thrush, but sweeter far in theme and execution, came to us now and then from his favorite place of hiding. We added but a single specimen of this Warbler on this trip, one that Mr. Palmer persuaded to come to the edge of the thicket bordering a boggy road, several miles from the place where I had observed my bird.

(To be Continued.)

WARDEN'S LIST OF THE BIRDS OF THE DISTRICT OF COLUMBIA.

BY WILLIAM PALMER, Washington, D. C.

Following is the extracted bird matter from a copy of a very rare book on the District of Columbia in the possession of Prof. Lester F. Ward of Washington, who has kindly permitted me to examine it. It is especially interesting for the fact that it is the oldest list of the birds of the vicinity of Washington that I have been able to find. There are 32 species given in the list; but 3 others are mentioned in the letter-press, so that we have a total of 35 species known to the author. An interesting feature is that Mr. Warden writes of the Crow Blackbird as "the crow black-bird."

Mr. Warden was wrong in speaking of the disappearance of the Wild Turkey and Geese. The former is still found sparingly a few miles west from the island up the Potomac River, and Wild Geese are occasionally seen flying over the city of Washington during the migrations. A few words about Analoetan or Mason's Island may be of interest. This is a wooded island of perhaps 75 acres, situated close to the Virginia shore opposite Georgetown or West Washington. It is a part of the District of Columbia. In our author's time it was quite a noted place with a fine mansion and well kept grounds. A ferry from its northern end to Georgetown was the regular line of travel from the island, the city of Alexandria and the south to Washington. Now the island is in litigation, its mansion is a ruin, and the broad acres are grown up with a tangle of vegetation abounding in birds. A long marsh borders its entire eastern side.

It is certainly very unexpected to find a list of Washington birds published in English in Paris. The full title of the work and its partition on the title page are as follows:

A chorographical and statistical description of the District of Columbia, the seat of the general Government of the United States, with an engraved plan of the district, and view of the capitol. Paris: Printed and sold by Smith, Rue Montmorency. 1816. [By D. B. Warden].

The first notice of birds appears on pages 148-150.

"The deer, wild turkey, canvas-back duck* and Wild Goose, which inhabited this place about fifty years ago, have all disappeared. This species of duck, so delicious to the taste, was then sold for sixpence.

The following method was formerly employed to kill the Wild Goose.† This bird, shy and cunning, feeds in the midst of a plain or open field, and forms a regular line at the extremity of which is placed a centinal, to give warning in case of danger, which, if remote, is indicated by a certain position of [149] the head, and if imminent by a certain cry. The sportsman by means of a docile horse, which concealed him

from the view, approached slowly, until he brought them in reach of his gun.

By an act of 1730, the shooting of deer was prohibited from the first of January to the first of August. The penalty was four hundred pounds of tobacco. By other acts of 1728, any master, mistress, owner of a family, or single taxable person, was obliged to produce yearly to the justice of the county, three squirrel scalps or crow's heads. The penalty in this case was three pounds of tobacco. A premium of two pounds was given for every scalp more than three. The reward for a wolf's head was two hundred pounds.

Analoetan Island abounds with birds of various kinds. The catbird is almost tame. When its nest is in danger, it makes a loud noise, and seems as if it would tear the face of the person who approaches it. We saw in the garden a partridge nest, containing nineteen eggs. The humming bird frequents [150] this place. When caught it feigns death like the opossum, and by this means, escapes from the hand. We saw one escape from the pretty hand of Mrs. B.—e.

The mocking bird‡ does not frequent this island, though it is seen on the adjacent borders of the river. Perhaps it has been expelled by the crow blackbird, its natural enemy, which swarms in this place. It is a pity that so enchanting a spot is deprived of the notes of this inimitable songster. [The list referred to is given on pages 210-211, and is here reproduced verbatim et punctuatum]. Mr. Jefferson in his "Notes on Virginia," has given a list of more than a hundred birds, inhabitants of that region, most of which are probably common to the District of Columbia; but this we were unable to ascertain, having seen the following only—thirty-two in number. The names of those employed by Wilson in his Ornithology "of the United States," a work which does great honor to the author, and to the country of which he was an adopted citizen."

<i>Anas Canadensis</i>	Canada Goose.
— <i>Sponsa</i>	Summer Duck.
— <i>Valisneria</i>	Canvas-back Duck or Whiteback.
— <i>Ferina</i>	Red-headed Duck.
<i>Alda Magna</i>	Meadow Lark.
— <i>Alpestris</i>	Shore Lark.
<i>Columba Migratoria</i>	Passenger Pigeon.
<i>Corvus Cristatus</i>	Blue Jay.
<i>Caprimulgus Americanus</i>	Night Hawk.
— <i>Vociferus</i>	Whip poor Will.
<i>Fringilla Tristis</i>	Yellowbird, or Goldfinch.
— <i>Cyanca</i>	Indigo Bird.
— <i>Rufa</i>	Fox-coloured Sparrow.

*Supposed to be the *Anas ferna* of Linnæus, or mildorin of Buffon.

†*Anser canadensis*.

‡*Muscicapa vertice nigra*.—Catesby.

§*Trochilus colubris*.

¶*Gracula guiscula*.

<i>Falco Pensylvanicus</i>	Slate-coloured Hawk.	<i>Sylvia Stalis</i>	Blue Bird.
<i>Hirundo Americana</i>	Barn Swallow.	— <i>Marilandica</i>	Maryland Yellow-throat.
<i>Lanius Carolinensis</i>	Logger-head Shrike.	— <i>Coronata</i>	Yellow-rump Warbler.
<i>Oriolus Baltimore</i>	Baltimore Oriole.	<i>Sturnus Predatorius</i>	Red-winged Starling.
— <i>Mulatus</i>	Orchard Oriole.	<i>Turdus Migratorius</i>	Robin.
<i>Picus Auratus</i>	Gold-winged Woodpecker.	— <i>Polyglottus</i>	Mocking Bird.
<i>Rallus Virginianus</i>	Virginia Rail.	— <i>Lividus</i>	Cat Bird.
<i>Strix Virginiana</i>	Great Horned Owl.	<i>Tetrao Virginianus</i>	Virginian Rail.*
— <i>Nyctea</i>	Snow Owl.	<i>Trochilus colubris</i>	Humming Bird.
<i>Scolopax Semipalmata</i>	Semipalmated Sniper.		

WILLIAM SWAINSON AND HIS TIMES.—VIII.

BY THEODORE GILL, Washington, D. C.

(Continued from Vol. V, page 39.)

The quarrel between Swainson and Vigors is of no interest or importance *per se*, but a consideration of it may give a good idea of the status of zoology at the time and the men of the day. Consequently a brief summary of it may be not unwelcome.

In 1825 and 1826, Vigors and Horsfield published in the Zoological Journal the diagnoses of several new genera of Parrots which they had either eliminated from the huge medley previously confounded under the name *Psittacus* or based on new species. This was capped by an article by Vigors giving the outlines of a general system of ornithology, and including a re-arrangement of all the genera of Parrots recognized by him in five subfamilies. It appeared in a section "On the arrangement of the genera of Birds" in a comprehensive series of articles entitled "Sketches in Ornithology;" [etc.] The subdivisions of the Parrots (vol. ii, p. 400) were enumerated as below. The names accepted by the most recent monographer of the group (Dr. T. Salvadori) in the Catalogue of the Birds of the British Museum (Vol. xx, 1891) are added in brackets after the Vigorsian names; when the name adapted by Salvadori is the same as that given by Vigors, the initial (S.) is alone used with the number of the page.

- II. Fam. PSITTACIDÆ. *Leach*. [Gen. *Psittacus*. Linn.]
- * Subfam. Psittacina.
 - Psittacus*. *Auct.*—*Androglossa*. [*Psittacus* S. 377.]
 - ** Subfam. Plectolophina.
 - Plectolophus*. *Vieill.* [*Cacatua* S. 115.]
 - Calyptorhynchus*. [S. 106.]
 - Microglossum*. *Geoff.* [*Microglossus* S. 102.]
 - *** Subfam. Macrocercina.
 - Macrocercus*. *Vieill.* [*Ara* S. 151.]
 - **** Subfam. Palæornina.

*Misprint for Quail.

†I do not exactly discern the force of the above epithets of the French writer. If we give a name to a newly characterized group it must necessarily be a *new* one. To give an *old* name would decidedly be an error. A *useless* name must indeed be allowed to be objectionable; but it must be proved to be useless before the objection can be made with justice." [Vigor's note.]

- Psittacara*. [*Conurus* S. 170.] *Nanodes* [S. 592.] *Platycercus*. [S. 540.] *Pezoporus*. III. [S. 596.] *Palæornis*. [S. 433.] *Trichoglossus*. [S. 49.] *Lorius*. [S. 31.] *Brotogeris*. [S. 253.]
- ***** Subfam. Psittaculina.
- Psittacula*. *Kuhl.* [S. 240.]

In 1827, Desmarest, in the 39th volume of the *Dictionnaire des Sciences Naturelles*, published a monograph of the Parrots, giving all the species recognized by him, in the article "Perroquet." He gave a summary of the previous arrangements of the group, the latest of which were those of Vigors and Horsfield, and gave his opinions of their new genera in terms which displeased those authors. The points to which especial exceptions were taken may be aptly indicated in Vigors's own words. (Z. J. iii, 92.)

"The chief points contained in this critique may be stated as follows.—A general condemnation is inferred of any subdivision in so natural a group, [le genre si naturel,] as that which forms the Linnean genus *Psittacus*. The subdivisions which have been pointed out by Dr. Horsfield and myself are affirmed to be founded on minute differences, without any value, or any apparent regard to the mode of life of the animals that compose them;—[sur des différences minutieuses, sans aucune valeur, et sans aucun rapport evident avec le genre de vie des animaux dont on les compose]. Most of our groups, it is asserted, have not even the merit of being original. They have nothing new but their names; 'being the same,' it is averred, 'as those secondary groups which have been long since pointed out, and well distinguished, [tres-bien distingués,] by MM. Brisson, Buffon, Vieillot, Le Vaillant, Kuhl, and other naturalists who have made a true progress in this branch of ornithology, without overcharging it with new and useless denominations.' A few

minute observations, which shall be briefly noted in their places, against particular names, are added to the sweeping condemnation."

The main issue thus raised was, is the group of Parrots a *genus* or an aggregate of many genera constituting an association of *higher taxonomic value* than a genus? It is to be especially remembered, then, that, at the commencement of the second quarter of the century just closed, this was a live question. A good French naturalist, in close accord with the eminent zoologists of his time in Paris, maintained that all the Parrots were congeneric! He recognized 222 nominal species, many of which, however, are now known to be conspecific; these he primarily distributed, not under subgenera, but what he called sections. He recognized six of these "sections"—*Ara*, *Psittaca*, *Psittacula*, *Psittacus*, *Kakadoc* and *Microglossum*. The numerous species of *Psittaca* or Perruches (11-100) were ranked under four "divisions":—*Psittacara*, *Sagittifer*, "*Perruches proprement dits*" and "*Perruches laticaudes*." These, as well as the other "sections," except *Ara*, were subdivided according to geographical distribution—whether American, African, Asiatic, Australian, or unknown. The species of *Ara* were grouped according to color, whether red, blue, or green.

We need only compare these views with those of Vigors already reproduced to recognize the very decided superiority of the English naturalist. Far from having gone to an extreme, the latter scarcely approached the stand now taken by naturalists. Salvadori, for example, in 1891, recognized 500 (499) species which he grouped under 79 genera and 6 families. Vigors, however, reached nearer to the modern ornithologists than any other of his time, and was the first to recognize that within the group of Parrots there were subdivisions of more than generic value, that is, subfamilies. The extent to which his genera have been adopted by modern ornithologists and especially Salvadori, is indicated in connection with the arrangement by Vigors reproduced above.

Vigors naturally was conscious of this superiority and naturally, too, he was nettled at the assumption of superiority of the French naturalist and the dogmatic and by no means gentle judgment passed on the work of himself and his associate.

Vigors replied to Desmarest in a long article of over thirty pages (*Z. J.*, iii, 91-123) in which he discussed the question of what a genus is, the composite nature of some natural groups, such as the Parrots, Monkeys, etc., and the principles which should guide in their subdivision.

In the *Zoological Journal* for 1828, Vigors and Horsfield published some "Observations on some of the Mammalia contained in the Museum of the Zoological Society" (iv, 105-114) in which they treated of several mammals of a doubtful nature, it being uncertain whether they were distinct from previously described forms or not. They gave new names to four species they believed to have been previously confounded with others or entirely new. They were very unfortunate in these cases for it is now known that one of the supposed new species was a variant

of the oldest named species of the genus to which it belonged, another (*Nasalis recurvus*) was based on the young of another well-known type, and the two others had been named some time before. The species have been determined as follows:—

- Simia alimana* (p. 107) = *Hylobates lar* (Linn.)
Nasalis recurvus (p. 110) = *Nasalis larvatus* (Wurmb.) yg.
Cheirogaleus Commersonii (p. 112) = *Nyctipithecus felinus* (Spix).
Sciurus Rafflesii (p. 113) = *Sciurus Prevostii* (Desm.)

Vigors and Horsfield also erred in refusing to recognize the genus *Hylobates* and in referring to a Lemuroid genus (*Cheirogaleus*) a South American Monkey (*Nyctipithecus* or *Aotus-felinus*). They likewise introduced an unnecessary note reflecting on Lesson. Lesson, soon after, in the *Bulletin des Sciences Naturelles*, noticed the article of Vigors and Horsfield and indicated what were the facts, with respect to three of the species, but failed to recognize what the *Cheirogaleus Commersonii* was. He naturally, in view of the note on himself, was less careful in the selection of words which should not wound than he might have been otherwise.

Vigors and Horsfield replied to Lesson in a long "Notice respecting some species of Mammalia referred to" (*Zool. Mag.*, v, 134-141) and defended their previous work. While they did not prove that they were right in their determinations, they demonstrated that they had some reason for their opinions, and pointed out some logical inconsistencies of Lesson. They further indicated what the *Cheirogaleus Commersonii* really was, but were led by this recognition to a false conception of the relations of the Monkeys and the Lemuroids. They could not, however, contravene the main postulates of Lesson, and undoubtedly were too abusive.

The fact that such good naturalists as Vigors and Horsfield could overlook the salient differences between gibbons (*Hylobates*) and the great Apes (*Simia*), and that they failed at first to recognize in their *Cheirogaleus* an American Monkey and afterwards misunderstood its relationship, conveys a vivid idea of the imperfect state at the time of mammalogy, and especially of a knowledge of the fundamental characters of the primate genera.

Such were the articles that Swainson felt called upon to reprobate. He did so, under the guise of "A Defence of 'certain French Naturalists'" in the *Magazine of Natural History* for March, 1831, (iv, 97-108). The article was not so much of a "Defence" of the French Naturalists as an attack on Vigors. There was no defence of the premises or assumptions of either Desmarest or Lesson, no justification of the arrogant terms in which they had criticised Vigors and Horsfield, and no dissent from the conclusions reached by the English Naturalists. It was rather a lecture on the amenities of criticisms as well as the duties of editors.

(To be Continued.)

THE OSPREY OR FISHHAWK; ITS CHARACTERISTICS AND HABITS.—III.

BY THEODORE GILL, Washington, D. C.

Continued from Vol. I, p. 42.

Audubon never saw a bird carried under water by its would-be prey.

OTHER FOOD.

Mr. Gentry, in his Life Histories of the Birds of Pennsylvania (ii, 278,) has recorded that "the reptiles and batrachians, which infest the swamps wherein it breeds, do not escape its vigilance," and even specifically adds that certain frogs ("*Rana clamitans*, *R. halicina*, *R. sylvatica*"), and snakes ("*Eutania sirtalis*, *Chlorosoma vernalis*, *Pituophis melanoleucus*, and others") are occasionally eaten. Perhaps the ordinary ornithologist may suspect that this list may be the result of assumption rather than observation by the author, inasmuch as no other has been witness to such a variety of diet.

It is possible, however, that Mr. Gentry may not have gone far astray in the assumption. Certain it is that the bird does not entirely disdain reptilian food. It has been seen on various occasions to pounce down on a water snake directing his tortuous course along the surface of the water and to bear it off in his talons. In the September (1900) number of the OSPREY (v, p. 6.) Professor Bartsch has recorded the result of his own observations. In the Mississippi valley he found it less prone to a catfish diet than about Washington; there he often noticed one seeking a dead limb with a small water-snake in its talons.

PERVERSION OF APPETITE.

Several instances have been recorded of trespass on the poultry preserves of man. Mr. John Harvie Brown has referred to several instances in which individuals were accused of such forages (Zoologist, 1868, p. 1484; 1874, p. 3996.) Mr. A. J. Clark-Kennedy has given still better evidence. "In the spring of 1871, a railway porter, near Tunbridge, [England,] had no less than eleven chickens carried off by an Osprey. His wife happened one day to hear a great commotion among the poultry in the garden, and, rushing out of the house, was just in time to see a large Hawk flying off with one of her chickens in its claws. The same thing happened several times, the bird returning twice or even thrice a day for his unwonted meal." At last her husband "borrowed a gun, and as evening drew on he awaited his unwelcome visitor. Nor had he long to wait, for the old hen soon made him aware of the enemy's approach by her loud and continuous cackling, as she gathered her remaining young ones under her wings. So intent was the Osprey on his prey that he never noticed the porter, who, as the bird made his final stoop, let drive, and stretched it dead beside its intended supper." The Osprey was positively identified and "set up in a most life-like attitude by Mr. B. Bates,

naturalist, of Eastbourne." (Zoologist, 1874, p. 3996, 3997.)

Montagu also has recorded (in his Ornithological Dictionary of British Birds) the pursuit and capture of a moderate sized bird by an Osprey. "An Osprey was seen to stoop and carry off a young and half-grown duck from the surface of the water, at Slapton Ley. In the struggle, the duck fell from the talons of the Eagle, but was recovered before it reached the water." The question may be raised in this case whether a mis-identification may not have been made. The bird was not captured or seen by Montagu.

A bird may acquire a depraved appetite as well as man. But such a trait is abnormal for the Osprey. Indeed, in some parts of the United States, the bird is protected because it is supposed not only to refrain from molesting poultry, but to be a safeguard for them against typical birds of prey.

With such experience, even in spite of the appearance of good faith and of positive identification of the culprits as described by the witnesses of the alleged facts, it may be held there is still a possibility that there was some flaw in the line of evidence which the accounts were intended to exhibit.

BEHAVIOUR AFTER MEALS.

Its behaviour after a meal probably varies with mood and conditions.

On the one hand, according to Audubon, "when it has satisfied its hunger, it does not, like other Hawks, stay perched until hunger again urges it forth, but usually sails about at a great height over the neighbouring waters."

On the other hand, it was the belief of Seebohm that, "like most raptorial birds, the Osprey, when its meal is finished, takes its perch, usually on some post in the water or treestump on the bank, where it sits, seemingly unconscious of danger, to digest its meal, and where it is easily approached, its curious appearance and large size proving but allurements to its doom."

Doubtless both authors were right in the record of observations, but both wrong in assuming invariability of procedure.

RETURN OF WANDERERS TO SUMMER QUARTERS.

The time and return of the Osprey to its summer home depends on the progress of the seasons. Audubon has stated the facts with tolerable correctness in a communication to Macgillivray in a little known work - The Raptacious Birds of Great Britain by Alexander Macgillivray: copies of the work, indeed, are so uncommon in Washington that the only one known to be found in the city is that in the library of the present writer. As Audubon's letter is equally unknown to most, its republi-

education here doubtless will be welcomed. This is done with all its peculiarities.

"My dear Friend, Since the publication of the first volume of my Ornithological Biography, in which an account of the habits of the Fish-hawk is given, I have had many opportunities of extending my acquaintance with it, and have traced it along the whole extent of the Atlantic coast of the United States, and even as far north as Labrador, where it breeds. I have the greatest pleasure of presenting you with the results of my observations, which you may use in whatever way you please.

"The difference between the periods at which this species breeds along the coast, from the Gulf of Mexico to the northern shores of the St. Lawrence, is very great. While on the St. John's River in Florida, on the 7th February 1832, I found the Fish-hawks very abundant, and all sitting on their eggs, many of which contained chicks nearly ready for emerging. The birds, therefore, must have paired at least six weeks previous to that date. I was, however, surprised to find them more tardy in this respect than the White-headed Eagles, which had young able to fly. Three hundred miles farther south, the Fish-hawks had laid their eggs a month earlier. Between the Floridas and New Jersey, or in the districts usually called the Middle States, they rarely begin to lay before the 15th of April. In the State of Maine, they seldom arrive before the middle of May, and in Labrador the period of their appearance is from the 1st to the 10th of June. It would be interesting to discover whether the Fish-hawk which breeds near the mouth of the Mississippi in January, breeds again in the course of the same season between that place and Labrador, or not. I have thought it not unlikely that it does, but have no facts to support the opinion.

"The Fish-hawk is far from always placing its nest on very high trees, but accommodates itself to any situation that may occur, provided other circumstances are favourable. On the Keys of the Floridas, its nest is often seen placed on a mangrove not more than seven or eight feet above the water. In two instances I saw it there on the ground, and once on the roof of a low house. In the latter case, the nest had been resorted to three successive years. In Labrador the nests which I saw were built on the stunted firs, there being no trees in the country deserving the name. In the Floridas, I saw several nests placed close to those of herons, ibises, and cormorants, all the species living together in the greatest harmony.

"I remain, my dear Mr. Macgillivray, your most sincerely attached friend, and obedient servant,

"J. J. AUDUBON.

"EDINBURGH, 15th June 1835."

It is only necessary to express dissent from Audubon's opinion that the bird may breed in two different places—north and south—in the same year.

PAIRING.

It has been said that, like raptorial birds in general, "The Osprey pairs for life and returns

yearly to its old breeding grounds." (Seebohm's British Birds, I, 59.) No direct evidence has been adduced in support of the statement and, indeed, it is not clear how conclusive testimony could be easily obtained. Except in isolated cases, one bird can not be distinguished from another. If either a male or female of a pair is shot or killed, the survivor may find a mate and has been observed to do so. The general statement that two birds pair for life may be true, but nevertheless is generally the expression of an assumption or unverified hypothesis. Verification can only be obtained by experimentation and permanent marking. The only evidence on record as to the Osprey is contained in two statements as to other facts published by Wilson and in a recent number of the OSPREY which are reproduced in another section.

COURTSHIP.

The emotions of love by the Osprey are manifested, according to Audubon, "in a different way from those of other Falcons. The males are seen playing through the air among themselves, chasing each other in sport, or sailing by the side or after the female which they have selected, uttering cries of joy and exultation, alighting on the branches of the tree on which their last year's nest is yet seen remaining and doubtless congratulating each other on finding their home again. Their caresses are mutual. They begin to augment their habitation, or to repair the injuries which it may have sustained during the winter, and are seen sailing together towards the shores, to collect the drifted seaweeds with which they line the nest anew."

CONSTANCY OF MATES.

It is generally supposed that the male birds consort for life, and a pathetic story is told of the sad voluntary loneliness of one of a pair who had been bereft of a mate by an accident. "Near Little Silver, in an open hillside field which slopes gently down to the highway, there stood in the early summer of 1876 a small group of tall locust trees upon one of which a pair of Ospreys had their abode. At a time when one of the birds, presumably female, was on the nest, a bolt of lightning struck the tree, killing the bird and demolishing the nest. Strangely enough, the other Osprey, when returning only to find his home desolated, took up his station upon the top of one of the uninjured trees close at hand, and throughout the remainder of the summer, was seen day after day, month after month, keeping his lonely vigil, apparently mourning the loss of his mate. By those who lived in the vicinity it was asserted that he was never missing from his post; and many were the speculations indulged with regard to the manner of his subsistence. Some inclined to the opinion that he went fishing very early in the morning and so escaped observation; while others supposed him to have been fed by other Fish-hawks who took pity on his lonely state. Perhaps both were true, but the former seemed more probable".

(To be Continued.)

THE OSPREY.

An Illustrated Magazine of Popular Ornithology.

Published Monthly.

By

THE OSPREY COMPANY.

Edited by Theodore Gill and Paul Bartsch, in collaboration with Robert Ridgway, Leonhard Stejneger, Frederic A. Lucas, Charles W. Richmond, William Palmer and Harry C. Oberholser of Washington, and Witmer Stone of Philadelphia.

Contributions of a relevant nature are respectfully solicited, and should be addressed to THE OSPREY COMPANY, 321-323 1/2 Street N. W., Washington, D. C.

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Comments.

RECENT MORTALITY AMONG ORNITHOLOGISTS.

For several months we were exempt, happily, from the necessity of recording the deaths of eminent ornithologists, but in the present number we regret to have to note the departure of two of wide renown, and of two others—Americans—less known. The first, however, did not die prematurely; both had lived far beyond the limits of normal old age; these were Dr. Gustav Hartlaub and Baron Edmond de Selys Longchamps. Both had passed their eighty sixth year; one only a short time before his death while the other had reached nearly to the end of it. The memorable span of seventy years of literary activity had been crossed by one—Selys Longchamps—and that activity had been continued almost to the end of his life. Certainly longevity may be coincident with long devotion to the study of nature! The Baron, of late years, devoted his attention almost exclusively to the consideration of the Odonate insects and so long a time had elapsed since he published about birds that many of the younger of the bird men

may not even know of him by name, but at one time he was a notable figure in European ornithology at least.

A friend of long standing and that had also reached a ripe old age has departed in the person of George A. Boardman—one who had won the respect and esteem of many of the American ornithologists. The youngest of the dead was a victim of a needless and quixotic war.

TITLES OF MAGAZINES AND COLLECTIONS.

We are indebted to Dr. Edward L. Greene, Professor of Botany in the "Catholic University of America" at Washington, for a pamphlet on "Some Literary Aspects of American Botany." It was originally published as an article in "the Catholic University Bulletin" for April, 1901. An interesting list of "several papers current, or else already completed," relating to botany is given. Botany and Ornithology touch at so many points, and what is true of one is true of the other to such an extent, that we note some of the results of Professor Greene's observations.

Professor Greene thinks that "since the demise of Dr. Gray the number of American writers on botanical subjects has increased almost a hundred fold;" but "of literary inventiveness on the part of such writers there is small evidence, judging by that very safe indicative, the titles of their serial papers."

Dr. Gray, we may add *en passant*, was for a long time a very powerful factor in keeping botanists in order and in suppressing any undue manifestation of eccentricity or, perhaps even, of independence. The fear of his trenchant criticism deterred many from authorial manifestation. Whether this state of affairs botanical was for the best or not, however, we will not venture to say.

Some of the titles Professor Greene enumerates are certainly rather far fetched and arrogant. Such are:

"Contributions to the Histogenesis of the Caryophyllales."

"Contributions to the North American Euphorbiaceae."

"Contributions to the Myxogasters of Maine."

"Contributions to the Gasteromycetes of Maine."

"Contributions to the Comparative Histology of Pulvini and the Resulting Pholeolitic Movements" (!).

We must postpone further consideration of the subject and the application to ornithology to our next number.

Letters.

A LIVE RAT EATEN BY A GREAT BLUE HERON.

WASHINGTON, D. C., April 1, 1901.

EDITORS OF THE OSPREY:

In response to your request I send an account of the capture of a rat by the Great Blue Heron at the Washington Zoo. It swallowed the rat, which was half grown.

The squeal of the rat was heard; and the Heron stalked out of his house, taking big steps, all his feathers raised, with this squealing rat in his beak. After swishing the rat about it the water tank several times, he swallowed it while still alive. Then he settled down to digest it, but during the day he disgorged the rat—only partially digested.

Sincerely,

WALTER KING STONE.

CURIOUS HABIT OF A CORMORANT AND REMOVAL OF STONES FROM STOMACH.

WASHINGTON, D. C., April 1901.

EDITORS OF THE OSPREY:

A rather interesting surgical operation was performed last summer by Mr. W. H. Blackburn of the National Zoological Park, which would have been successful had it been cooler weather.

One day one of the young Florida Cormorants was noticed sitting down and unable to rise. On being lifted he was found to be full of stones which could be heard grating together. Mr. Blackburn promptly cut him open and took from him two pounds of stones, one of which was irregular in shape, and at least 3½ inches in its longest dimension. The bird being sewed up lived five days, and the wound had begun to heal when he pulled the stitches out with his hooked bill, and opened up the wound; consequently he died.

Sincerely,

WALTER KING STONE.

PRICES OF AUDUBON'S BIRDS OF AMERICA AND ORNITHOLOGICAL BIOGRAPHY. In response to an inquiry of a subscriber in the OSPREY for December last, we gave prices of some copies of Audubon's "Birds of America" sold at auction. We now give some supplementary data.

Bernard Quaritch was (he lately died) for many years the most extensive dealer in expensive second-hand books in London, and frequently issued catalogues of different sections

of his stock. In one (No. 181) he advertised sets of a couple of Audubon's works. "The Birds of America" (4 vols.) and the "Ornithological Biography" (5 vols.) were listed together at £350 (about \$1,750). They were described as "uniformly bound in half blue morocco by Lewis." Four other copies of the "Ornithological Biography" were listed at £4, 4s., £5, £5, 12s. 6d., and £7, 10s. respectively. The last was the "author's presentation copy to William Yarrell," the English naturalist, and a "proof portrait" with "autograph affixed" was "inserted"; it was bound in "calf extra by J. Clarke."

QUARITCH'S PRICES FOR THE "AUK" AND "IBIS."—Application for price of back volumes of the "Auk" are occasionally made. A set was advertised in August, 1898, by Quaritch (No. 181) for £8, 10s. (about \$42). The set had the 14 volumes from 1884 to 1897 and the first twelve were bound in half morocco.

A complete set of the *Ibis* from 1859 to 1895 inclusive with general index, (38 volumes,) "half bound in morocco gilt," was listed at the same time for £85 (about \$425)—over \$11 a volume.

LARGE PRICE FOR AUDUBON'S PRINCEPS OCTAVO EDITION. We have been favored by Dr. Ruthven Deane with a note on a recent sale of a copy of the first octavo edition (1840-44) of Audubon's "Birds of America" which gives the record price of the work. It is an index of the flourishing times we are now enjoying. The edition is not what bibliopoles call rare and the high price may be the expression of an unusually fine copy richly bound or some other extraneous circumstance.—EDITORS.

MICHIGAN, March 31, 1901.

EDITORS OF THE OSPREY:

I read with interest your "Recent sales of Audubon's Works." In regard to the original 8vo. edition, 7 volumes, a fine set sold at the Geo. A. Balcom sale in Boston, February 5, 1901, for \$308, which is said to be the largest price ever realized for this edition at auction. At the Cox sale in New York in 1900, a set brought \$241. At the Ives sale in 1891, a set brought \$192.50. To keep your readers posted you may like to mention this in your next issue.

Yours truly,

RUTHVEN DEANE.

Notes.

THE DEATH OF DR. GUSTAV HARTLAUB deprives ornithology of a veteran laborer who had reached unusual distinction as well as length of years. Doctor Hartlaub was born in Bremen, Nov. 8, 1814, and died in his native city, Nov. 20, 1900, having thus passed his 86th year. His father held an eminent position in Bremen, having been the chief of an old mercantile house as well as senator of the free city. The son, after a preliminary course in the university

school, went to the universities of Bonn, Berlin and Gottingen, and attended lectures on medicine and natural history, finally gaining the degree of M. D. Soon afterwards, he visited the chief European cities, and then returned to take up the practice of medicine, which he followed till near the end of his life.

His first published contribution to ornithology appears to have been in 1841 in the form of a description of the later celebrated Little Sheath-

bill (*Chionis minor*) in the *Revue Zoologique*, and in that journal he published his earlier papers. Nearly two hundred memoirs or articles in various scientific journals followed. These, to a large extent, related to the birds of Africa, but the entire field of descriptive ornithology was covered by him. His principal independent works were on the birds of West Africa ("System der Ornithologie Westafrika's") in 1857, one on Polynesian birds (*Beitrag zur Fauna Central-polynesiens*) in 1867, and another on birds of Madagascar (*Die Vogel Madagaskars und der benachbarten Inselgruppen*) in 1877.

Perhaps the most generally useful of his contributions, and the most consulted of all, was a series of annual reports on the progress of ornithology which he contributed for quarter of a century (1846-1871) to the "Archiv für Naturgeschichte" under the editorship, first, of Erichson and, later, of Troschel.

THE DEATH OF BARON EDMOND DE SELYS LONGCHAMPS has removed another veteran, a life-long contemporary of Hartlaub. He was born nearly six months before the Bremen ornithologist (May 25, 1813) at Paris, and lived three weeks longer; his death took place Dec. 11, 1900, at Liège in Belgium. His full christian name was Michel Edmond, but he only used the latter for his scientific articles; the essential family name was Selys, and he was in ordinary converse addressed as M. Selys. His very earliest published writing was for the *Dictionnaire Geographique de Liège* in 1831, when he was in his eighteenth year, and related to the birds and insects of that province. Even his first scientific paper generally referred to was contributed two years before Hartlaub's (1839) to the same periodical *Revue Zoologique* (i, 248-249) and was descriptive of supposed new species of field mice; his second was on dragon flies, and the third on birds. He thus early manifested his preference for the groups to which he was destined to devote his principal attention for over sixty years. The small mammals were the especial subjects of his consideration, and he invented the term *Micromammalogie* for the specialty. His work was in advance of the time, and has only lately received the credit due to it. His first scientific article on birds, published in 1839, was on the classification of the Passerines (*Analyse d'une classification des oiseaux Passereaux basée sur le genre de vie et sur les formes de ces oiseaux*), and the last of any extent at least, published in 1880, was also on classification (*La classification des oiseaux depuis Linné*). His later publications have had reference almost entirely to the odonate insects (Dragon flies).

He was a student at the University of Liège and early established his residence at Longchamps near Waremmé about fifteen miles westward. He became prominent in political life,

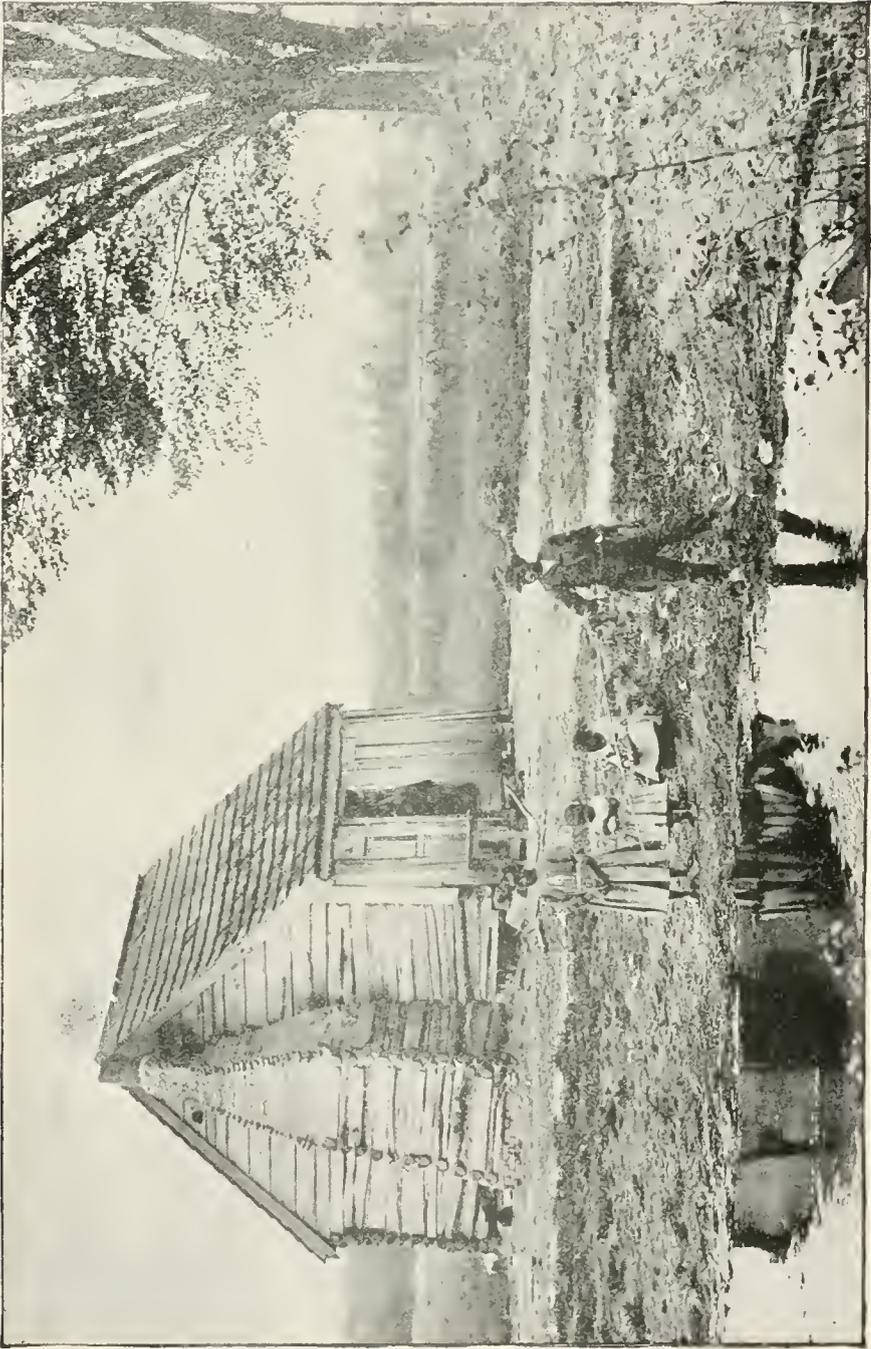
having been a communal councillor of Waremmé as early as 1841, and subsequently he filled various positions, finally becoming president of the Belgian senate in 1880, and remaining as such till 1884.

He was a frequent correspondent of Mr. Gerrit Miller of Washington and Mr. Miller may edit a posthumous article by him.

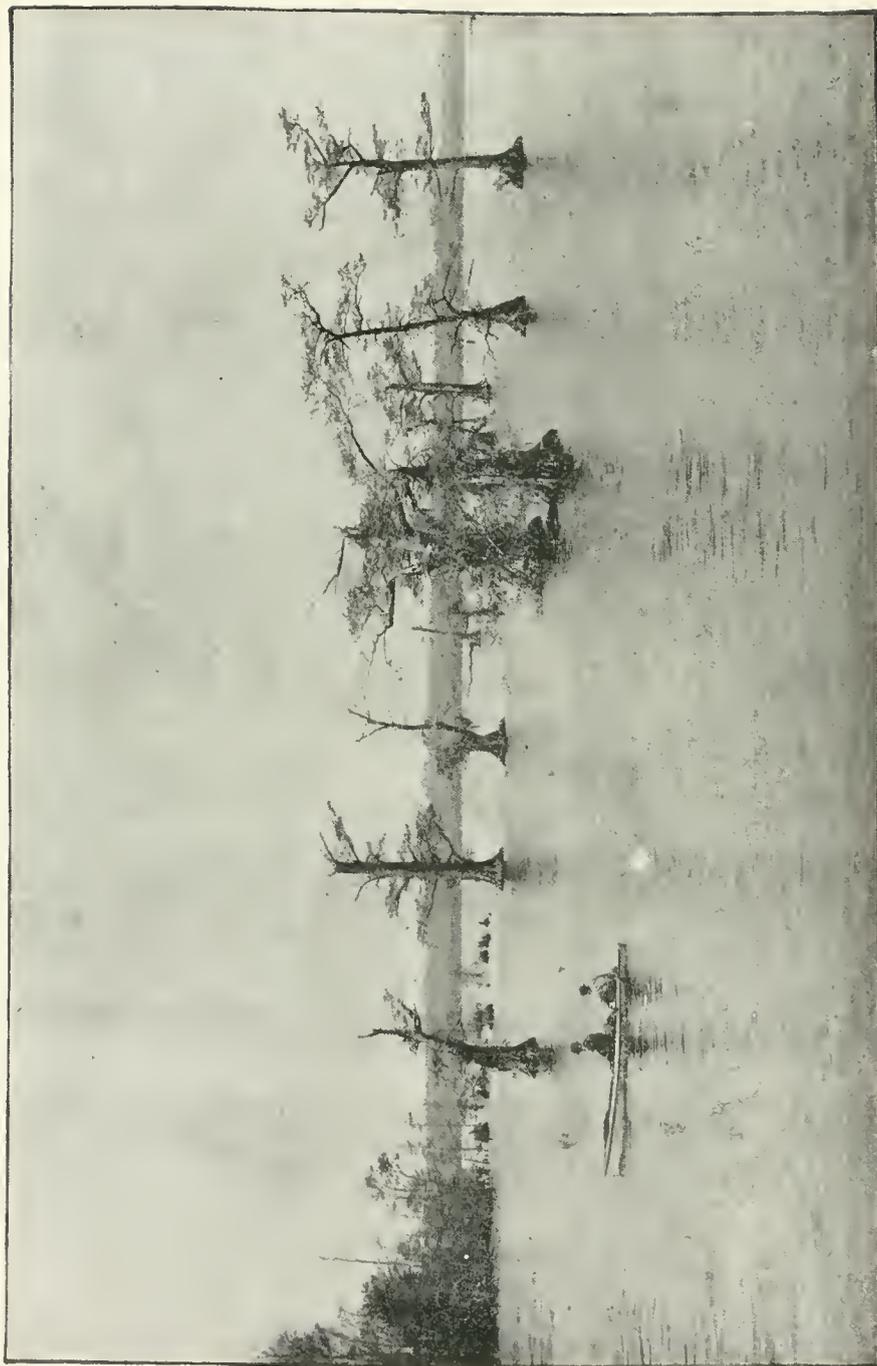
THE DEATH OF GEORGE A BOARDMAN deprives the OSPREY of one of its oldest friends and subscribers. Mr. Boardman was born in Newburyport, Mass., February 5, 1818, and moved, with his family, to Calais, Maine, in 1828. In Calais he remained a resident to the end of his life. He "conducted the largest lumber business on the St. Croix River, until 1871, when he retired from active business." He early imbibed a taste for ornithology and gradually brought together a very fine collection of well-mounted birds, and his series of those of New England was especially rich. He spent almost if not quite every winter for more than three decades in Florida, and stopped on his way between the north and south in Washington where he called on friends at the Smithsonian Institution and interchanged views relating to his favorite study. His published contributions were mostly consigned to the popular periodicals, especially "*Forest and Stream*" and the "*Times*," a newspaper of his home city, but articles also appeared in the *Bulletin of the Nuttall Ornithological Club*. A "Catalogue of the Birds found in the vicinity of Calais, Maine, and about the islands of the Bay of Fundy" was published as early as 1862 in the *Proceedings of the Boston Society of Natural History* (ix, 122-142).

Mr. Boardman died at Calais, January 11, 1901. An excellent likeness was published in *Forest and Stream* for August 5, 1899, and January 26, 1901, giving a good idea of his small alert form and pleasing countenance.

THE DEATH OF JOHN CLIFFORD BROWN adds one more to the many victims of our greed for foreign possessions and the costly glory of being nominal masters of the Philippine archipelago. He volunteered for the Spanish war, and after serving as a captain in one volunteer regiment and lieutenant in another, enlisted in the Engineer Corps of the regular army, and was sent to the Philippine Islands. There he was assigned to responsible duty as a civil engineer. At last he had an attack of dysentery for which he was returned to the United States, and died January 16, 1891, at Los Angeles, California. He was born in Portland, Maine, March 28, 1872. He was a frequent contributor of notes on Maine birds to *The Auk*.



A SUNDAY SCENE AT THE HEAD OF JERICHO DITCH.



CYPRESS TREES, FRINGING THE EASTERN SHORE OF LAKE DRUMMOND.

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Original Articles.

A TRIP TO THE DISMAL SWAMP. III.

By PAUL BARTSCH, Washington, D. C.

The fifth, was a day whose memory will cling for many a year to come. We crossed the lake early in the morning, paddled along its southern shore, visited the Outlet Canal at the east end, and returned along its northern margin late in the afternoon.

The lake is a very shallow basin, some two and one-half miles in diameter, with a maximum depth of sixteen feet. During the summer months its waters become quite warm. On this day our thermometer registered a temperature of 96° Fahr. near the margin and 92° at the greatest depth we sounded, the water of its tributaries being somewhat lower. The lake seemed to be swarming with minute organisms, for every little floating leaf which we picked up from its surface was found to shelter a host of invertebrate forms from the direct rays of the blazing sun.

In spite of the many praises and curative properties accredited to this dusky liquid, my internal anatomy absolutely refused to harbor any of the stuff on this memorable day. I was feeling all but well when we left in the morning, and became less and less so as the hours slipped by, and oh, how I did long for a single drink of pure water, just a little cooler than that about us, and though we tried each little tributary, luke warm or warmer it always proved to be, and a single taste of it would suffice to cause me to turn away from it with a shudder.

About two o'clock in the afternoon we arrived at the Outlet Canal; here we landed our canoe and walked down the path along its high embankment to the lock where we were greeted by Mr. Marsh, the keeper of the lock. I asked him immediately if he had anything cooler to drink than ditch water, and he replied that he had a well, which he said was located a couple hundred yards back in the timber. I was too tired to join them in their trip to the precious fountain so stretched out under the shady trees and waited long, long, minutes for their return. How I loved that pitcher as it came nearer and

nearer, and finally poised over my cup. At last I was to have that drink which I had craved so many hours—but, even as the liquid fell into the glass my spirits sank and my frame weakened—dark! the same old dark, swamp flavored fluid only a few degrees cooler than that which had mocked me all day. Mr. Palmer paddled me home to the hotel that afternoon, limp and despondent, ready to give up all for a single drink of pure, cool water. It required two days of rest to get myself in shape for further explorations. The first of these was spent upon my bunk, the second in taking care of collections and capturing butterflies, which appeared abundantly about the hotel. They seemed to be partial to the dumping ground and judging from the manner in which a number applied their long probosces to the carcass of a small mammal which had been deprived of its skin, sipping up the fluid brought to the surface by decomposition, they were not disinclined toward a carnivorous diet. By far the greater number seen here were *Papilio turnus*, and *P. palamedes*; though *P. ajax* and individuals of a number of other genera were by no means rare.

On the eighth we again visited the east end of the lake and camped for a night at the Outlet Lock.

When the first white men visited the lake many years ago, immense cypresses skirted its margin. To-day we have only a fringing line of stumps, which plainly mark the handiwork of civilized man, with here and there a hollow cypress shell which was too thin, even to furnish shingles. These natural chimneys furnish nesting sites to the Swifts, and almost every one fit for such use appeared to be tenanted by a pair or more of these dusky individuals. Not solely by them however, for we found several species of bats, *Lasiurus borealis*, *Nycticeius humeralis*, and that curiously large-eared species *Corynorhinus macrotis* taking refuge within their walls, while upon their wide spread partly submerged roots sundry species of water snakes

found a pleasant resting place. A pair of Great Crested Flycatchers appeared to be nesting in a cavity in one of the upper branches of one of these trees, while in another a pair of pretty Parula Warblers had concealed their neat home in a bunch of grey Tillandsia which drapes these silent sentinels of the lake. Toward noon these trees and bordering stumps were visited by strings of Turkey Buzzards which would stop for a drink and perhaps a bit of a bath before resuming their graceful searching flight. We spent the greater portion of the day collecting plants, amongst them a beautiful lot of a new fern, since described as *Dryopteris goldiana celsa* by Mr. Palmer, and many Prothallial fronds and young stages of a number of species, which were growing abundantly in the rich, moist, peaty, soil, exposed by the deep cut made for the Outlet Canal. The Red-bellied and Pileated Woodpeckers seemed to be quite abundant in the large timber bordering the canal, and the loud buoyant notes of the latter were very pronounced as they went laughing from place to place. Red-shouldered Hawks, perhaps of the Florida variety, were also quite abundant, and judging from the hooting at night *Syrnium nebulosum alleni* was well represented in the swamp fauna.

We returned to the hotel on the morning of the ninth and remained only long enough to dispose of some of our collections and to replenish our larder for a trip up Washington Ditch.

This water way takes its name from the fact that Washington himself supervised its construction. It is between four and five miles in length extending from Jericho Ditch near its union with the lake, in a west of northwesterly direction. It is a beautiful path, passing through dense timber almost throughout its whole extent. Tall trees to the right and left stretch their long branches across this watery trail and thus leave the canopy o'er head almost unbroken. Only here and there where a tall cypress with its few trim branches decked with slender needles rears its towering top, does one get a clearer view of the heavens above for the needles form a veil-like canopy not at all dense, like that of the broad leaved trees. Hooded Warblers and Prothonotaries are conspicuous features of this region; while the Tufted Tits and Carolina Wrens yodeled their jolly songs as they moved about among the lower vegetation.

The scene was a most charming one and presented all that could be desired upon our first trip. This time, however, we found more than we had bargained for and all of this in the entomological line. In '07 I made my first acquaintance with the Black Flies, and this only on the last day of our visit. I was greatly disappointed in their size. The stories I had heard had led me to believe these little bull dogs to be at least as large as a good-sized Horse-fly and now they proved to be of almost microscopic proportions; but if their size was small their appetite certainly was large enough and their persistency a thing to be admired. They appeared to be all jaws, ever busily engaged in digging. While at the lake we had occasionally been visited by a large ferocious fly of flat form and

more or less transparent wings, whose visit usually meant a piece of skin gone and a painful bleeding spot. No matter how little time elapsed between your discovery of the intruder and his expulsion you were sure to be left bleeding if he touched you. On this trip up Washington Ditch, I killed seven, at one time, as fast as I could strike. They belonged to two different species, and I believe we failed to bring specimens back with us for identification, our mode of collecting being too severe to permit of preservation. These pests, together with countless Black Flies and Mosquitos made it necessary for one to brush his face with each stroke of the paddle, and I remember well that as we withdrew the paddle from the water we would brush our face and neck with the hollow of our arm in order to keep these beasts of the forest from devouring us then and there.

The water in the ditch was quite low and necessitated considerable pushing and poling, occasionally, to slide our boat ahead over the slimy bottom until we would reach a deeper stretch of water.

We arrived at the end toward evening and established ourselves for the night in the corn crib belonging to the colored family at the head of the ditch. In the mean time it had grown dark, but being anxious to have a drink of pure water and some bread, neither of which had been ours since we left Suffolk I persuaded one of the little colored urchins to act as my guide on a trip to the nearest store, which was at Sanders, Va., some three miles distant.

Heavy thunder clouds marked the western horizon and the flashes of lightning became more and more vivid and lighted our way as we proceeded along winding paths, over boggy roads across this outlying member of the swamp. Owls were very abundant and at one time I even felt tempted to collect a specimen with my twenty-two calibre revolver, the only gun I had taken with me, but my aim was poor in the uncertain light and this *Bubo* may still be enjoying his nightly raids and serenades.

A little further along a fox ran across our path and trotted leisurely along a short distance ahead of us. The ball which was intended to add his skin to our collection simply increased his speed.

While we were purchasing our provisions and satisfying my thirst, which seemed to be everlasting, the storm broke loose most violently and this caused me to accept Mr. Sanders' invitation to spend the night with him, which I gladly did. A good clean bed is at all times preferable to a corn crib floor, particularly on a rainy night, doubly so, when the roof of the crib is leaky.

We returned early the following morning and were just in time to join Mr. Palmer in the cup of coffee he had prepared and add crackers and sweets to the meagre bill of fare.

We found a pair of Kingfishers at this end of the ditch and I am puzzled as to the whereabouts of their breeding grounds, there being no bank anywhere near this place. Pine Warblers, birds we had not noted in the interior of the swamp were also quite abundant in this place.

The return trip was much easier owing to the increase of water in the ditch due to the rain of the previous night. The coolness of the atmosphere seemed also to somewhat lessen the activities of mosquitos and flies, for which we were duly thankful. We succeeded in getting a good ducking from a sudden shower, just before we reached the hotel, but our spirits were good and we really enjoyed even this bit of experience.

That night we packed our contraptions, and the following morning found us paddling with a steady stroke up Jericho Ditch to meet the appointment with our driver. It was a drizzling day, a day well suited for a long pull, provided you are dressed lightly enough not to mind the moist garments, and we were.

We arrived in due time, adding a female Wood Duck, with her flock of young ducklings, to our list of swamp inhabitants, just before we left its bounds.

We were well pleased with our week's sojourn in this part of the country and sorry indeed to part from the region which had given us so many delightful moments as well as experiences to the contrary, and almost wished that we might return to this home of solitude and simplicity, to camp again on the edge of beautiful Lake Drummond.

We now append a list of birds observed on the two summer trips into the swamp.

Florida Cormorant.
Wood Duck.
Great Blue Heron.
Green Heron.
Woodcock.
Turkey Buzzard.
Red-shouldered Hawk.
Florida Barred Owl.
Great Horned Owl.
Yellow-billed Cuckoo.
King Fisher.

Red-bellied Woodpecker.
Downy Woodpecker.
Hairy Woodpecker.
Pileated Woodpecker.
Chimney Swift.
Ruby-throated Hummer.
Kingbird.
Great Crested Flycatcher.
Acadian Flycatcher.
Wood Pewee.
Crow.
Towhee Bunting.
Cardinal.
Barn Swallow.
Purple Martin.
Waxwing.
Red-eyed Vireo.
Warbling Vireo.
White-eyed Vireo.
Black and White Creeper.
Prothonotary Warbler.
Swainson's Warbler.
Worm-eating Warbler.
Parula Warbler.
Yellow Warbler.
Yellow-throated Warbler.
Pine Warbler.
Prairie Warbler.
Oven Bird.
Louisiana Water Thrush.
Maryland Yellow-throat.
Florida Yellow-throat.
Yellow-breasted Chat.
Hooded Warbler.
Redstart.
Cat Bird.
House Wren.
Carolina Wren.
Nuthatch.
Tufted Tit.
Carolina Chickadee.
Wood Thrush.

A CANOE TRIP UP THE SAN JUAN RIVER, MEXICO, IN SEARCH OF BIRDS.

BY PERCY SHUFELDT, Washington, D. C.

The second of January last was one of those cold bleak days when the wind seems to enter the very inmost cracks and crevices of your body--on such a day our steamer sailed from New York bearing the tricolor of Mexico at the peak of her fore-mast, nor did we leave this inhospitable weather, with its flock of crying gulls, until the third day out, when I awoke to feel, yes! to smell, the soft sea air which always reminds the accustomed traveler of the coast of Virginia in early May, blowing softly through the port-hole of my stateroom.

Havana, our first landing place, impressed me at once by its lack of bird life. From here we made for the Gulf Coast of Mexico; Mexico, the Land of Birds. In a howling "norther," with the waves breaking over our deck, we crept behind the protecting jetties of Vera Cruz. I remained long enough to get my outfit through the Custom House, and made at once for my

stopping place, Tlacotalpan, a village in the state of Vera Cruz on the San Juan River.

Tlacotalpan is one of the most beautiful little cities that I have ever seen in Mexico; with its streets of velvet green, its red tiled multicolored houses, and its stately palms, it presents a picture long retained in memory.

My little house here was the scene of much hard work and constant desire to see my companion and fellow worker, Mr. A. E. Colburn who was to join me here. Three weeks had passed when, on my way to the Post Office, a stout brown-faced American yelled "Hey there!" as I passed. In a moment I was shaking hands with Colburn, much browner, much stronger than when he had left me three months before in Washington; with him was Mr. H. C. Moore, the African hunter and collector, who had first taken me to Mexico. In less time than it takes me to tell, we were all at my house, where soon

a camp dinner was on the fire; such a dinner as I had not tasted in many a long day. Two weeks of good dinners with a little collecting, and Mr. Moore was recalled to the city of Mexico.

Almost at once Mr. Colburn and myself set about finishing our plans to ascend the San Juan River. With a 30-foot native dug-out canoe and provisions which we thought should last us for six weeks we left Tlacotalpan on February 15, at daylight, for our trip up the river. Everything so far, considering our limited knowledge of Spanish and of handling this kind of a boat, had gone along smoothly.

Slowly we crept along near the grass covered banks of this silent stream; now and then we passed a native hut or a canoe which was moored to the bank while her crew prepared breakfast, and all the time we longed to leave even these slight signs of native civilization. As dark approached we prepared for supper and to camp for the night. Shall I ever forget that first night with the constant cry of Whip-poor-wills and Night Herons ever in our ears, with rain, mosquitoes and ticks trying their best to devour us bodily? no! never so long as I remember anything. Yet after the few hours of sleep that we were able to catch toward morning, we awoke with a firm determination to press on, and with hungry eyes and ears to know what was ahead of us.

As the days passed on, huts became fewer, a canoe passed us only now and then, whole days pass, and only the noisy rattle of the Kingfisher with his red throat and back of burnished green to break the stillness. The river banks grew higher with now and then a clump of trees swarming with birds, many of which I had not seen in life before. The full moon shone at night upon the river, rendering it one burst of flowing silver. Now and then a great fish broke the stillness with a mighty splash, sending a shower of silvery sparks high into the air. Now from the distance comes that strange weird song of Mexico, and a native clad entirely in

white and standing erect in his canoe glides past, a flock of crying night birds pass, and all is quiet—still again.

More slowly as the current in the river grows swifter we creep towards the jungle, the river, bending, in some places almost doubling back upon itself, becomes more and more as I had often dreamed a tropical river should be. Palms with their stately waving foliage line the banks, great trees hung with curling, twisting vines offer a home to chattering parrots, a flash yellow and vivid green is passed, and Colburn tells me that I have seen a Trogon. At one place we passed a clump of bushes which some big Iguanas had made their home. They stood statue-like in the broiling sun, only to fall awkwardly into the water or to run hastily into their holes in the bank as we approached nearer.

One day, while we had stopped to eat dinner and skin some specimens beneath the shade of a mighty fruit tree, I heard a strange noise above us; looking up we at once discovered a troop of Monkeys eating *their* dinner. How unkindly we treated that first company of Monkeys I should not like to say here.

The days passed on; clumps of graceful bamboo nodded a welcome to us. We were indeed in the wild, wild forest of the tropics, beneath its cool shade, alone with Nature, and now one of the fondest dreams of my life was indeed a reality. There were moments of discouragement, times when the work seemed hard, but all this was outweighed a thousand times by the many pleasures and new experiences which came to us at every turn in the river, at the passing of every tree and bush.

Two weeks have passed, and now we are in our camp 120 miles above Tlacotalpan, on a hill overlooking a vast extent of original forest, the San Juan River shining like a silver thread below us, the jungle at our door, we wait with eagerness only known to the collector in a new country to know what a tortuous tramp through the woods will add to our collection.

MY STORY OF THE SHARP-SHINNED HAWK.

BY P. M. SILLOWAY, Lewistown, Mont.

At my former Illinois home, both in Maconpin and in Greene Counties, it was my fortune to know the Sharp-shinned Hawk (*Accipiter velox* *Wils.*) only as a spring and fall visitor, for my observations were not thorough enough to find it as a summer resident. I well remember my first meeting with this cruel little Accipitrine. I was collecting one fine spring morning in a small maple grove on the edge of Virden, Illinois, giving special attention to migrating Warblers that were occasionally flitting into the grove to spend a few minutes in foraging among the unfolding vegetation. Suddenly the Accipiter, seemingly quite large to me in the imperfect light and in comparison with the small forms of the tree-top vocalists, glided among the gray stems of the slender maples and alighted on a low branch scarcely twenty feet from me. Upon

picking up my prize, I found a Robin tightly grasped in the marauder's claws, from whose body the head had been neatly wrenched, as expertly as if it had been wrung in the manner one wrings the neck of a chicken.

One fall I was going from the public square to my home, and I had reached the third block from the square, where I was passing under a row of noble maples. The English Sparrow had appropriated old nests of the Robins, and using the structures as foundations, had built up several roomy habitations in the upper parts of the maples. Happening to be looking upward, a habit we bird-cranks get into when we are mousing along the shaded highways, I observed a Sharp-shinned Hawk flit along, swoop into the top of one of the Sparrows' nests, and alight in an exposed situation in a maple tree across the

street. He had plucked a Sparrow out of the nest, and was leisurely proceeding to enjoy an afternoon lunch. I stopped and watched the performance for a few moments, then stepped hastily onward to my home, got my gun, went back to where the *Accipiter* remained in the most unconcerned disregard of my suspicious movements, and soon had in hand a fine specimen of *A. velox*, with fragments of the unfortunate sparrow.

My Montana acquaintance with *Accipiter velox* has been more satisfactory, zoologically considered; it began on May 19, 1900, when I was scouring a small willow and haw thicket near Lewistown, Fergus County, my present home. I was drawing near the terminus of a weary tramp in a drizzling rain, and had chanced upon several "finds" that had kept up my spirits despite the conditions. A specimen of *velox*, angered at my intrusion of its appropriated domain, flapped from a perch a few yards ahead of me, clacking loudly as it darted among the dwarf stems to another position not far away. Visions of eggs, splashed, blotched and dotted, — yea, eggs of the Sharp-shinned Hawk not yet represented in my small collection, sent a thrill of hope through my mind, and as I scanned the surroundings with eager glances I mentally pictured the fine series of eggs of *A. velox* that might fall to my lot, — a brilliant figment of the imagination caused merrily by the sight of a Hawk flitting through the shrubbery. Nothing was in view, however, except a half-completed nest low down in a haw tree; and this doubtful looking structure might be only perish the thought! might be only the foundation of a deserted Crow's nest of a former season.

The first of June found me again a visitor at the thicket, and this time, as I approached the nest with foot-fall as light as dew on the ground, — ah, there was the mistress presiding over her establishment with due faithfulness, and in a few moments I was gazing upon three handsome eggs, marked and blotched even beyond my vividest fancy. Leaving the eggs undisturbed, I returned to the nest on June 6th, finding four eggs to be the full complement.

The nest was a mass of twigs placed in a crotch of a haw tree, the brim being nine (9) feet from the ground. The structure was 10 to 12 inches in its varying diameters, the cavity being one and one-half inches deep, with no attempt at lining.

On July 3rd, 1900, I was spending my last day of collecting in the vicinity of the Montana State University Biological Station, Flathead Lake. It was not my last day of collecting, I should explain, but my last day of egg-collecting, for my time thereafter had been promised for the collecting of birds. I was exploring a swampy willow grove along the lakeshore, where I had spent more or less time during the preceding three weeks. Passing a group of firs, I started a female Sharp-shinned Hawk, and as she turned behind one of the surrounding clumps of bushes, I caught her by a fortunate shot; indeed, I thought she had escaped, and did not take the trouble to look for her. Upon reaching up to the nest from which she had started, I found four as handsome eggs as I ever beheld. Then I began to regret that the owner had not offered me a more opportune shot, and going to the place where she had disappeared, I looked carefully, but without result. Returning to the nest, I gathered the beauties and made careful notes in my tablet.

This nest was placed between two large firs, which grew about two feet apart and about two feet from a slender birch, forming a triangular site for the *Accipitrine* home, well concealed and cozily situated upon the horizontal, interlocking branches of the firs. The site was eight feet from the ground. As usual, the nest was a mass of small twigs, the average diameter being fifteen inches. The cavity was six inches across and one and one-half inches deep, no lining being evident. The eggs were found to be advanced in incubation. Disliking to depart without more definite identification of the eggs, I searched for the owner, and finally found her where she had fallen at a considerable distance beyond the clump which had last hidden her from vision. Thus ends my story of *Accipiter velox*.

WILLIAM SWAINSON AND HIS TIMES.—IX.

BY THEODORE GILL, Washington, D. C.

(Continued from Vol. V, page 58.)

Swainson's so-called "Defence" further was devoted to laudation of the French Naturalists in question, intermixed with much irrelevant matter and the ventilation of his own grievance against another French Naturalist (the Baron de Férussac). One apparent assumption of Vigors, however, was properly dealt with, viz: "that there exists a conspiracy among the naturalists of France against those of England". Swainson with some justice added that "such sentiments, . . . are implied, no one can doubt who has perused the repeated attacks that have been made upon some of the French Naturalists individually, and upon the whole collectively." Vigors un-

doubtedly had gone too far in such an assumption, but his language in defense, otherwise, was not more vigorous than Swainson's in animadversion of him or of John Edward Gray a short time before. He could not but have anticipated if he did not deliberately provoke a controversy.

After a vain "appeal" to Swainson "through the medium of his friends" for "due reparation for expressions" which he was willing "to believe originated in some strange and untoward misconception" (iv, 206, 207), Vigors gave vent to his wrath in "A reply to Art. I., No. xxiii, of this Magazine" (M. N. H., iv, 319-337). He charged Swainson with having had the audacity

to accuse another [Vigors] of having abused the authority intrusted to him as editor of a scientific journal [the *Zoological Journal*] by introducing into that work private communications addressed particularly to private individuals, and not intended for the public (p. 97.); of abusing the same power, by making a spirit of dissension and of invective the conspicuous feature of that journal (same page); of equally abusing the influence which he is alleged to possess as the ostensible agent of a scientific institution, by rendering that institution far behind all others, whether of France or England, in the march of liberality (p. 106.); of being the detractor of men of merit (p. 104.); of not acting in accordance with his own recorded possessions (p. 98.); of rendering his professions of *truth* being his guide utterly worthless, by not putting them in practice. (p. 105.)

He proceeded to note and answer these charges categorically and at great length. The entire "reply" was full of personalities and certain inconsistencies of Swainson were exposed and ridiculed.

After a preliminary announcement (iv, 456), an answer to this effusion was published in the November number of the *Magazine* (iv, 481-486) as "The final statement of Mr. Swainson in reply to Mr. Vigors." Swainson endeavoured to explain his "connection with the *Zoological Society*" and Dr. Richardson, defended his disinterested aid to others, accused Vigors "of being profoundly ignorant of the very essence of that quinary and circular system upon which he publicly lectures," and concluded with the resolution:—"Nothing shall now tempt me to another reply."

One naïve paragraph related to his "grade and 'profession.'" He remarked: "My interrogator 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."

Meanwhile protests were made by "subscribers" and "correspondents" of the *Magazine* against the admission of such personalities as Swainson and Vigors had indulged in to the exclusion or delay of more important matter. Vigors consequently suggested (iv, 359) that the editor should publish, in the "next number such a surplus portion of the really important materials which [he knew the editor had] always in hand, as will equal the space taken up by [Vigors's] communications; for the expenses of which surplus matter [Vigors would] feel great satisfaction in being responsible." He also enclosed a letter from MacLeay completely exonerating him from "having, in an unauthorized manner, published [his] private and confidential correspondence," which was duly printed in an "Appendix" (iv, 560).

Vigors, by a reason of "absence from England for some weeks," was "prevented" from seeing

Swainson's "Final Statement" for a time (see v, 113) but, in an "appendix" to the *March* (1832) number (v, "[191]" "[208.]" returned to the charge in another long article of 16 pages in which he selected paragraphs of Swainson's answer and commented at length on them. It need only be said here that considerable information is incidentally furnished of the personal relations of Swainson with others and the entire controversy has some historical interest and importance. Those who wish for further information, however, must refer to the original.

Vigors was not at all suppressed by Swainson's reproof as a superior officer: he replied (v, 201): "the exact degree of precedence that exists between Mr. Swainson and myself in 'camps and courts,' I must leave to himself to determine. He will find me little solicitous on such points; and not the less so because they refer to matters of fact, not of words." "His connection with the army, as far as I can collect from his own observations, if I have mistaken him, I am open to correction, originated in his being in some way employed in the commissariat department."

It may be recalled here that Swainson took especial pride in being, when retired, the highest officer for his age in his corps. Vigors of course could not have been as ill-informed respecting this as he pretended. Swainson, by injudicious allusions and innuendoes drew upon himself not only Vigors's wrath, but became involved in controversy with or was answered by E. T. Bennett, (iv, 199-206; 211-213) and W. S. MacLeay (iv, 506) and subscribers to his "*Zoological Illustrations*" were also provoked to join in the fray (iv, 272-273; 457-459; 554-555.)

Swainson subsequently was reconciled to Vigors and evidently had learned to respect his ability and he made amends for his previous attack. In 1837, in his work "On the Natural History and Classification of Birds" (ii, 304,) he dedicated a genus of parrots to Vigors in these terms:

"I wish to name this interesting group, of which I only know the typical distinctions, in commemoration of the excellent ornithologist who first defined, and ably illustrated, many of the groups in this family; and whose efforts towards determining their natural arrangement have been conducted on sound philosophical principles. I have adopted nearly all the genera proposed by Mr. Vigors, simply because I have found them natural. Those of Mr. Wagler I have totally rejected: they are not better than M. Lesson's, and have therefore no claim to a preference, even on the score of bare priority: they seem to me, in short, highly artificial and altogether inadmissible."

(To be Continued.)

*The pages containing Vigors's reply were intercalated and numbered within brackets as indicated so that they could be eliminated without prejudice to the regular pagination of the volume.

THE OSPREY OR FISHHAWK; ITS CHARACTERISTICS AND HABITS.—IV.

BY THEODORE GILL, Washington, D. C.

Continued from Vol. V, p. 60.

"He remained until late in September, but at the time the other Ospreys departed he too disappeared. The next spring, however, found

others are huge conglomerations representing the successive additions of years.

The nests are variously placed. By preference, indeed, the birds build about or near the summit of some tree, the kind being of little account. For instance they have been found "in the tops of cedars, the various species of oaks, hickories, poplar, buttonwoods, tupelos, wild cherry, black walnut, and pear trees;" the list might be indefinitely extended. But when suitable trees are absent, they make shift in many ways. At Plum Island, "the nests were placed almost anywhere on the tops of the highest trees, or on their lowest branches, only five or six feet from the ground; on stunted trees only a few feet in height, on isolated trees far out in open land, as well as in the woods; on the sheep barn, and on an old pile of rails by the gate of the farm house; while thirty to forty per cent were actually on the ground. These latter varied from a slight depression in the ground, as in the case of newly formed nests, to conical mounds four or five feet high, formed by materials added



OSPREY NEST ON GARDINER'S ISLAND.

him again at his post, and throughout the whole summer he continued just as before; but in the ensuing autumn, joining the company of his fellow Ospreys in their journey to the southland, he departed, this time to return no more."

Such is the story heard by Mr. Harry C. Oberholser, and told by him in the *OSPREY* for December 1897, (ii, 50). The episode happened in Monmouth County, New Jersey.

We presume to doubt, however, that the bereft Osprey received the attention of others to the extent supposed, or that it was watched with the assiduity claimed.

PLACE OF NESTING.

The Osprey raises but one brood a year in one locality, Audubon's belief to the contrary notwithstanding.

At the commencement of settled spring weather, it enters upon the duty of perpetuating its race. A young couple may build a nest for themselves or take possession of an abandoned one. But the same nest may be occupied year after year. As soon as a pair take possession of an old nest of which one or both may have been previous occupants, they "at once set to work to repair any damage their nests may have received from the previous winter blasts." Consequently there is much difference between nests, some being crude and shallow, while

ded year after year by the birds, filled in with sand blown by the winds. High rocks on the shore, and low rocks far out in the water, scarcely above high tide and swept by the autumn storms were also chosen as situations for nests. A large buoy, with a lattice-work top, near the west end of Fisher's Island, was also occupied for many years by a nest of these birds, greatly to the advantage of sailors and fishermen, who were warned in thick weather of the position of the buoy by the screaming of the Fish Hawks."

One nest described by Mr. Allen "was placed upon an old pile of fence



OSPREY NEST IN R. I.

rails, rotted to black mould in the center, but kept up by the yearly addition of fresh rails. Mr. Jerome said that to his knowledge this nest

about one-third of the way across, the seething volume of water, confined here between frowning walls of basalt, was cleft in twain by a rocky obstruction which had so far withstood the ever eroding currents, and this was capped with a slender and fairly tapering column of rock rising directly out of the "swirling and foaming whirlpool below them."

A number of illustrations of nesting places of the Osprey have already appeared in the *OSPREY* magazine, and some of them are here reproduced.

Five of them represents nests in trees and it will be seen that they have been built on the summits of the trees or as high up as there was a basis of support. One represents a large nest at Gardiner's Island, photographed by Mr. Henry R. Buck, on a projecting branch (i, 127); another a nest, also at Gardiner's Island, in the crotch of a tree a short distance below its summit (i, 128); a third was photographed in Rhode Island, (Narragansett Bay,) near the main summit of a tree (i, 129) by Mr. H. S. Hathaway; a fourth was also obtained in Narragansett Bay in the top crotch of a tree (ii, 19).

One pictures a site observed by Mr. J. H. Clark with "a small part of the nest on top of the rock to the right of the live tree," taken in the grand canyon of the Yellowstone (i, 141). It is only noteworthy as an instance of preference evinced for a site other than a tree. One illustrates a nest built on the ground at the edge of a shallow bank, that is, where there was a slope or abrupt though slight descent by a portion of the nest. This was taken by Mr. O. W. Knight in Penobscot Bay, Maine, (iii, 75).

An illustration of special provision for the Osprey and which has been accepted by the bird is given in another figure. A high pole with a round platform at the summit was planted at Bristol, (R. I.), and taken possession of by a pair for their nest (ii, 41).



OSPREY NEST AT NARRAGANSETT BAY.

had been occupied every year for forty years. It likewise had been added to yearly until its bulk of sticks, sods, cow dung, decayed wood, seaweed, etc., would amount to at least three cartloads, in addition to what had rotted and fallen to the ground. The nest was only seven or eight feet from the ground, so that by stepping on a projecting rail I could readily see the three beautiful spotted eggs within, which I promised not to disturb. Mr. Jerome could pass close to the pile of rails without the birds leaving the nest, while I could not get nearer than thirty or forty feet. They would dive down near my head, uttering a shrill cry, and at the same time threateningly stretching out their claws; and while flying nervously about they constantly uttered a sound resembling the call of a young chicken or turkey when lost from its mother. They would alight on the nest again before I was fifty yards away."

Capt. Bendire has described "the most picturesque nesting site of the Osprey" he ever saw. It was at the American Falls of Snake River in Idaho. "Right on the very brink of these, and

The nest is subject to even greater variations than the site. The birds seem to have a curious

COMPOSITION OF NESTS.



OSPREY NEST ON ROCK BELOW.



OSPREY NEST IN PENOBSCOT BAY, MAINE.

bleached bones from the pasture, as the ribs and long bones of sheep and cattle, and especially *sheep skulls*. Nearly all the old nests had masses of dried cow dung, and large pieces of sod, with the grass still growing."

A cautionary paragraph is in order respecting this catalogue. The branches of the trees "ten or twelve feet long" must have been those of the tree in which a nest was built and not carried there. The "eggs" enumerated as those of "sharks and dog fish" were the ovi-capsules of rays, no oviparous scylliorhinoid shark or dogfish occurring along the Massachusetts coast.

John Wolley, who had examined a number of nests, thought that "there is something, in the general appearance of the nest, which reminds one of nests of the wood-ants; it is usually in the form of a cone cut off at the top; the sticks project very slightly beyond the sides, and are built up with turf and other compact materials; the summit is of moss, very flat and even; and

propensity to appropriate the least likely articles for nest building or adornment. Mr. Allen has described a number of nests examined at Plum Island, and has given a catalogue of the various objects he found in different nests. The catalogue is a remarkable one and deserves to be reproduced; it includes "sticks, branches of trees, from three to five feet long, a few ten or twelve feet long, for protecting the base of the nest; brushwood, barrel staves, barrel heads, and hoops; bunches of seaweed, long masses of kelp, mullein stalks and corn-stalks, laths, shingles, small pieces of boards from boxes; parts of oars, a broken boathook, tiller of a boat, a small rudder, and parts of life preservers; large pieces of fish nets, cork and cedar net floats, and pieces of rope, some of them twenty feet in length; charred wood, sticks from hay bales, and short, thick logs of wood; a toy boat, with one sail still attached; sponges, long strings of conch eggs, and eggs of sharks and dogfish; a small axe with a broken handle, part of a hay rake, old brooms, an old plane, a feather-duster, a deck swab, a blacking-brush and a boot-jack; a rubber boot, several old shoes, an old pair of trousers, a straw hat, and a part of an oil skin sou'wester; a long fishing line, with sinkers and hooks attached, wound on a board; old bottles, tin cans, oyster shells, and large periwinkle shells, one rag doll, shells and bright colored stones, a small fruit basket, part of an eel pot, a small worn-out door mat; wings of ducks and gulls, sometime with parts of the skeleton attached, and one fresh crow's wing. A strange feature was the frequent presence of



OSPREY NEST AT BRISTOL, R. I.

the cavity occupies a comparatively small part of it." Wolley added that he knew "no other nest at all like it." He evidently had no idea of the great variety which might be found in Ospreys' nests. He made, however, very voluminous notes on the nests and eggs of European birds he had observed which are recorded in the "Ootheca Wolleyana," "Edited from the original notes by Alfred Newton," and published in 1864 (p. 58-72).

EGGS.

The eggs are diversiform as well as diversicolor. They are slightly larger than an ordinary hen's egg. The average measurement of sixty-nine specimens in the U. S. National Museum was estimated by Bendire at 62 millimetres for

Great variation is manifest in the coloration. "The ground color is usually a creamy white, and this is sometimes so evenly and regularly overlaid with pigment as to give it a buffy or vinaceous appearance." Most eggs are superficially of the "buffy" color beset with spots or blotches running more or less into each other, and aggregated or blended about the big end and, exceptionally, at the little end. The variation is towards an almost spotless dusky white or a reddish brown with the markings obsolete.

One of the 111 eggs in the U. S. National Museum has markings reminding one of fly specks. "The beautiful vinaceous red tints found in some of the eggs of this species when fresh [are said to] become darker with age."

The most common number of eggs in a set is



OSPREY NEST AT PROVIDENCE, R. I.

length and 46 for width: the largest egg measured 68.5 by 49.5 millimetres and was obtained at Cape St. Lucas; the smallest was 59.5 by 42 millimetres and was found in Cape May County, N. J.

They, as Bendire has remarked, "vary greatly in shape, ranging from an ovate to either a short rounded, elliptical, or elongate ovate." The regular ovate is the normal type, and the deviations are comparatively rare.

three, but sometimes there are as few as two, and on the other hand as many as four. Dresser records that "out of about 80 eggs," all were "in clutches of three, except three clutches, which consist of four eggs each." In one nest on Plum Island, Mr. Allen found five, and the entirely exceptional occurrence of seven young in one nest has been recorded by Mr. R. H. Howe, Jr.

(To be Continued.)

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Comments.

NAMES OF MAGAZINES.

In the last number of the OSPREY, we made comments on the "titles of magazines and collections" *apropos* of Professor Greene's article on "Some Literary Aspects of American Botany." We reproduced some of the titles advertised on by Professor Greene, such as "Contributions to the histogenesis of the Caryophyllales."

Respecting these Professor Greene has well remarked: "By what is assumed in such titles every one of them is supremely ridiculous. Since contributions means adding to, and histogenesis is the name of a certain vital process which, like all other vital processes, man is and will forever be powerless to set in motion, it is no more possible for a man to make contributions to histogenesis than for him to contribute a planet to the solar system. And so this author of contributions to the histogenesis of the Caryophyllales is assuming, though unwittingly, a power that has hitherto been conceded to the Author and Giver of Life."

Again, "to assume the ability of contributing to the myxogasters, whether of Maine or any other portion of our planet, is to assume supernatural powers. Only the Creator can contribute to the world's aggregate of either Myxogasters or Gasteromycetes or Euphorbiacea".

These are indeed funny titles!

But we cannot agree with Professor Greene on one point, that is, as to the word Contributions. Our learned critic thinks that the use of that term involves somewhat of arrogance. He remarks: "The most pretentious series of scientific papers that was somewhat early undertaken in this country is that entitled 'Smithsonian Contributions to Knowledge.' The name 'Contributions' is one which is rather too high-sounding to be chosen by any scientist of overmuch reserve and diffidence. But the term was early introduced into our botanical literature as a heading by the eminent author of 'Contributions to Botany.'"

We cannot concur with him in this. The widow who "contributes" her mite to the "contribution box" of her church certainly cannot be considered to commit an arrogant act. So the humble botanist (or ornithologist) who ventures to make known some observation which, he thinks, has not been made before, as a "contribution" to his science, should be rather commended for the modesty of his claim than for arrogance in assuming a title. But let this pass. In almost all other respects we are at one with Professor Greene.

One of the main objections urged by Professor Greene against such titles as have been published and their like is their inordinate length and the difficulty of condensing or abbreviating them in a manner which shall be readily intelligible.

He thinks that a short title is much to be preferred from such a point of view. The botanists have now or have had many periodicals thus designated, many named after botanists who have become distinguished in their line or at least endeared themselves to those who have given such names. Among them are the journals named *Linnaea* and *Lindenia*, *Grevillia*, *Pittonia*.

From the names of these and other journals, it would appear that euphony rather than the celebrity of a name has been considered in the selection of a title. With the exception of *Linnaeus*, none of the botanists thus commemorated acquired a fame equal to a number that have not been so distinguished.

The principle of the system of nomenclature involved in this practice is not bad. If the

name of a great botanist is selected with reference to that department in which he excelled, and was generally acknowledged to excel, the scope of a periodical named after him may be inferred or at least guessed at from the title. It is a pity that ornithologists have not adopted such a system, if a short title must be regarded as essential, rather than that to which they have so frequently resorted.

A peculiar style for uninomial ornithological journals was early inaugurated. The name of a bird—*Rhea*—was selected as far back as 1846, for a periodical devoted to ornithology; this, however, had little influence. But in 1863 a quarterly periodical was commenced by several eminent British ornithologists and the name selected was *THE IBIS*—still surviving, and long may it flourish! There was some reason for taking the name of a bird formerly and for a long time regarded as sacred and around which a copious literature had grown up. But the principle was liable to abuse, and, in fact, has been flagrantly abused. Many are the journals that have been named after birds since then, but not with the taste or propriety manifest in the case of the *Ibis*. We need not

mention any of them except our own magazine, *THE OSPREY*. What is there in the *Osprey* that its name should be tacked on to a magazine? Nothing whatever! There is no aptness and nothing suggestive. The system is a bad one calculated to bring ridicule on the science and should no longer be continued.

There is certainly an advantage in a short title for purposes of citation and if one is deemed necessary, the latinized name of a master of the science assuredly is more suggestive and more appropriate than that of a bird.

An ornithological periodical was named after the manner in vogue among the botanists as early as 1849; it was called after the eminent ornithologist, J. F. Naumann, *Naumannia*. This procedure was eminently proper and the example might be followed with advantage. Why should not such titles as *The Wilsonia*, *The Audubonia*, *The Bairdia*, or some other on the same model be used for a magazine devoted to American Ornithology? If a wider field is to be covered, such names as *The Sceleria*, *The Newtonia*, *The Sharpia*, and *The Cabanisia* suggest themselves. At any rate, we hope the senseless naming after birds may be abandoned.

Notes.

MIMICRY AMONG BIRDS will be a subject for investigation of a zoological expedition to the Malay peninsula that by the time this number of the *OSPREY* is out will have arrived there. The scientific members of this party will be Mr. N. Annandale and Mr. H. C. Robinson, the former was one of the Skeit expedition to the Siamese Malay States in 1899, and the latter is an honorary research assistant in the Zoological Department of the University College of Liverpool. "They intend to settle for a year in the native State of Jalor, near the east coast of Lower Siam, and to explore the neighborhood of Patani and Biseret. Collections will be made in all branches of natural history, while one of the special objects of the expedition is the study of the pre-Malayan tribes of Negrito stock who inhabited the center of the peninsula. A thorough investigation will also be made of the fauna—both living and extinct—of certain very large limestone caves which are found in the district, and are said to extend for great distances underground. The birds of the district will also be studied, and observations made on mimicry and allied phenomena. The ethnographical work ought to be interesting, since Jalor is on the borderland in which the Siamese and Malay race meet."

A COLLECTION OF THE BIRDS OF OHIO has been given by Mr. W. L. Hayden of Columbus to the Ohio State University. It will be under the charge of the Department of Zoology and Entomology. According to a note in *Science*,

"it includes representatives of a large number of native birds and is noteworthy from the fact that the different species are shown with their natural surroundings, nests, eggs and often young, as well as old, birds of both sexes. Some particularly striking effects are produced with the nests of owls and woodpeckers included in sections of the trees in which they were constructed. The collection is arranged in forty-two handsome cases, finished in oak, and is stated to have cost over one thousand dollars in its preparation, not counting the time, ingenuity and skill which Mr. Hayden has lavished upon it."

BIRDS AT A CHURCH SERVICE. Trinity Methodist Church, one of the leading churches of this city, used as Easter choristers on Sunday sixty Canaries and fifty Mocking Birds. The idea originated with Miss Rose White Steighagen, the organist. She suggested to the pastor that it would be a novelty if the birds could be made to render the music. He agreed with her and they set to work on last Thursday to secure the birds. They visited the various members of the congregation and the bird stores of the city, and asked for all the birds they had—Canaries or Mocking Birds—they did not care which, they said.

Many of the parishioners were curious to know what they wanted with the songsters, but no amount of questions was sufficient to draw the secret either from the organist or the preacher. When the congregation filed into

church and perceived cages depending from the roof they were surprised. The birds themselves appeared to be frightened until the organ sounded. Then they appeared to take confidence, and before the first few notes of the prelude had been rendered one of the Canaries burst into song. Another took it up almost instantly, and then another and another, until all the birds were singing.

After that, during the entire service, sermon and all, the birds kept the church filled with their music—the Mocking Birds, with their stronger voices, doing particularly well. Members of the church are now discussing the advisability of continuing the birds as a regular feature.—*Atlanta Paper*.

THE BIRDS OF NORTH AND MIDDLE AMERICA by Mr. Ridgway is now being rapidly set up by the printers of the Government Printing Office, and the first part will be ready for publication early in the summer. The full title will be as follows:

The Birds of North and Middle America: a descriptive catalogue of the higher groups, genera, species, and subspecies of birds known to occur in North America, from the Arctic Lands to the Isthmus of Panama, the West Indies and other islands of the Caribbean Sea, and the Galapagos Archipelago. By Robert Ridgway, Curator, Division of Birds. Part I. Fringillidae. Washington: G. P. O. 1901.

The proposed scope of the work is given in a long preface from which we extract enough to satisfy in part the curiosity of the readers of the OSPREY.

"Although preparations for the present work have been more or less actively conducted for some twenty years past, as time and opportunity permitted, the actual work of putting together the vast amount of material accumulated during that period was not begun until September, 1894, when the author was directed by Dr. G. Brown Goode, Assistant Secretary of the Smithsonian Institution, in charge of the National Museum, to consider of paramount importance among his official duties the task of "making available, through publication, the results of the ornithological work of the Government, as represented in the collections of the Smithsonian Institution." The labor of collating references pertaining to more than 3,000 species of birds, verifying citations of original descriptions, measuring many thousands of specimens, and other time-consuming details connected with the preparation of such a work has necessarily delayed the beginning of its publication; but most of this drudgery having been disposed of, it is hoped that future progress may be more rapid.

"In the following pages the attempt is made to describe every species and subspecies, or definable form, of bird found on the continent of North America, from the arctic districts to the eastern end of the Isthmus of Panama, together with those of the West Indies and other islands of the Caribbean Sea (except Trinidad and Tobago), and the Galapagos Archipelago; introduced, and naturalized species being included as well as accidental or casual visitors.

"The classification presented is essentially that of the most recent and advanced authorities, with such minor modifications as in the judgment of the present author seems desirable. The imperfection of our knowledge concerning the internal structure of many groups of birds, however, makes an entirely satisfactory classification impossible at the present time, and that here adopted must therefore be considered as provisional only. An entirely sound classification of the birds is a matter of the future, requiring vastly extended investigations in the field of avian anatomy and the expenditure of an enormous amount of time and labor in elaborating the results.

"Some effort has been made to establish the proper terminology of the higher groups, no fixed rule having been followed in this respect, and the law of priority, so rigidly applied to genera and species, quite generally ignored. The synonymy of those higher groups, as given, is by no means complete, however, but little time being available for its compilation.

"The matter of determining the limits of families and genera among birds is one of great difficulty, especially among the Passeres; partly because such groups are often not clearly defined, but also because the material necessary for determining such questions is not always available. The question of what constitutes a "family" or a "genus" being involved, and, moreover, one concerning which there is much difference of opinion among systematists, the author's views may be stated, in order to make clear the principles which have been his guide in the present work.

"Accepting evolution as an established fact and it is difficult to understand how anyone who has studied the subject seriously can by any possibility believe otherwise—there are no "hard and fast lines," no gaps, or "missing links" in the chain of existing animal forms except as they are caused by the extinction of certain intermediate types; therefore, there can be no such group as a family or genus (nor any other for that matter) unless it is cut off from other groups by the existence of such a gap; because unless thus isolated it can not be defined, and therefore has no existence in fact. These gaps being very unequally distributed, it necessarily follows that the groups thus formed are very unequal in value; sometimes alternate links in the chain may be missing; again, several in continuous sequence are gone, while occasionally a series of several or even numerous links may be intact. It thus happens that family or generic groups seem very natural or homogeneous, because the range of generic or specific variation is not great and there is no near approach to the characters of another co-ordinate group, while others seem very artificial or heterogenous because among the many generic or specific forms none seem to have dropped out, and therefore, however great the range of variation in structural details, no division into trenchant groups is practicable—not because extreme division would result, but simply because there can be no proper definition of groups which do not exist. In short, no group, whether of generic, family, or higher rank, can

be valid unless it can be defined by characters which serve to distinguish it from every other.

"In groups of wide geographic range it is of course necessary to have all its components in hand in order to determine its limits and the number and boundaries of its subdivisions, for what seem distinct families of genera within the limits of a fauna may, when all the forms of an entire continent or zoögeographic "region" or the world at large, are examined, be found to be connected by intermediate "extralimital" forms. Sometimes, however, this test proves exactly the reverse to be true. Therefore, in the present work the families and genera recognized have not been based on the species belonging to North and Middle America alone, but on all others that were available, so far as time permitted."

A COLLECTION OF THE BIRDS OF MICHIGAN in the University of Michigan has been rearranged. "The birds that are natives of Michigan are in three cases on the east side of the bird room. Those in the case farthest north are birds to be found north of Ann Arbor, those in the middle case birds in the neighborhood, and those in the third case birds living to the south of Ann Arbor.

"The west side of the bird room is occupied with cases containing specimens from many different parts of the world. These are scientifically arranged. Besides the specimens in the cases, thirty-six bird groups have been arranged. These are mounted in their natural surroundings, often with nests, eggs and young. Each group is a picture of bird life. In addition to the mounted specimens in the bird room of the museum, the University possesses nearly four thousand skins for use in scientific study in the class room."

A COLUMBARIUM AT WOOD'S HOLL.—It seems that investigations at the "Marine Biological Laboratory, Wood's Holl," are not to be confined to the inhabitants of the sea. The eminent director, Prof. O. C. Whitman, has just published, in *Science* for April 5, a report on "Natural History Work" at the station and gives some unexpected news especially interesting to ornithologists which we reproduce. Inasmuch as the remarks—that the "pigeon group" has between four and five hundred wild species"—has been interpreted by more than one to be descriptive of the Wood's Holl columbarium, it is not superfluous to explain that it is evidently only a general statement respecting our present knowledge of the order, and has nothing to do with the columbarium; we may add that in 1893 Salvadori recognized "458 [species] besides 27 of a more doubtful character", and of these 42 species were not represented by skins even in the surprisingly rich collection of the British Museum.—EDITORS.

"Animal behavior has engaged the attention of a number of investigators, led by Loeb, Wheeler, Thorndike and others. The demand for instruction followed the development of various lines of research, and the courses in general physiology and animal psychology were,

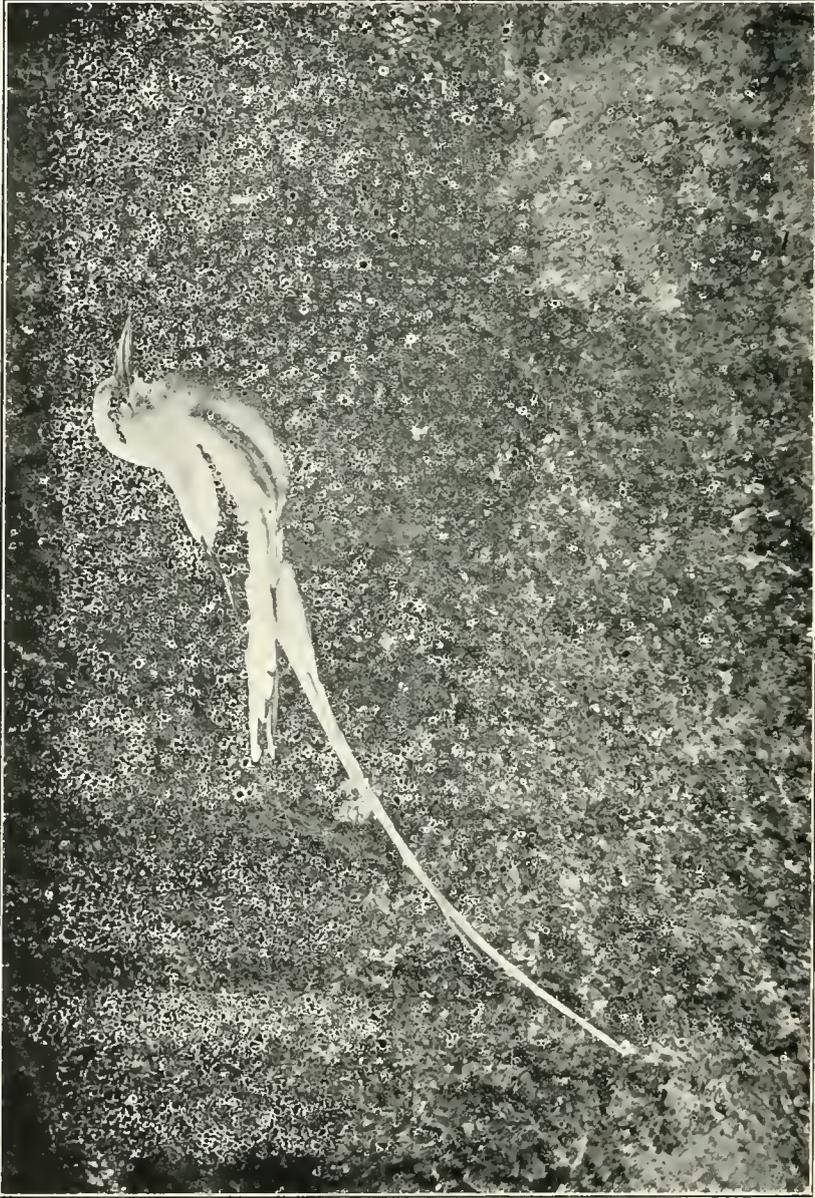
so to speak, spontaneous inevitables. The course in nature study, introduced for the first time last summer, furnished a typical illustration of the convergence of interests now cooperating at the Laboratory. Although the class only numbered fifteen members, over thirty investigators contributed to the instruction given, and a large share of the lectures, laboratory work and field studies were of the nature of research. Indeed, problems and demonstrations drawn from original work actually in progress, and presented by the investigators themselves, characterized the course throughout.

"In the further development of this course in natural history, we are looking forward to hoped-for facilities far beyond our present realizations. The creation of a Natural History Farm at Wood's Holl may be somewhat remote still, nevertheless the project is entertained, and a small step has already been taken in anticipation. The columbarium now under cultivation is, I venture to hope, the first instalment of such a farm. This collection of pigeons, already the largest of the kind in existence, and rapidly increasing by accessions from all parts of the world, was undertaken with several ends in view. The pigeon group, containing between four and five hundred wild species, and not less than one hundred and fifty domestic species or varieties, offers one of the most favorable fields for the comparative study of variation and for experimentation in dealing with the problems of heredity and evolution. While the principal aim in making the collection was the investigation of problems, the farm project has been kept steadily in view. The columbarium would form one section of the farm, and exemplify its uses and unique advantages for every side of natural history".

A LIVE DOMINICA PARROT has been secured by the Zoological Society of London for the menagerie, and has been entered as the "August Amazon (*Chrysotis augusta*). It is a fine bird and the species is destined apparently to become extinct in the not distant future. The society had an example once before, in 1865.

THE DEATH OF AUDUBON WHEELLOCK RIDGWAY, son of Robert Ridgway, occurred in Chicago, February 22, 1901, in his twenty-fourth year, he having been born May 15, 1877, in Washington, D. C. He had recently become especially interested in the study of ornithology, and was well acquainted with the birds of the eastern states and Florida, having collected many specimens in the latter state during a winter's visit. In November last he was appointed Assistant in the Department of Ornithology at the Field Columbian Museum, and entered upon his duties with great enthusiasm. In February he contracted a bad cold which developed into pneumonia, from which he died on the 22nd.

C. W. R.



YELLOW BILLED TROPIC BIRD.

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NOTES ON THE BIRDS OF THE BERMUDAS WITH DESCRIPTIONS OF TWO NEW SUBSPECIES AND SEVERAL ADDITIONS TO THE FAUNA.

BY A. HYATT VERRILL.

Situated as the Bermudas are, at a considerable distance from either America or Europe, and well to the eastward of the Gulf Stream, it is not at all surprising that comparatively few of our migratory birds visit the little mid-ocean land. In fact, the number of species recorded (about 200) is rather remarkable, and especially

fact in regard to the Bermudian avifauna is the apparent absence of any species peculiar to the island and, so far as I can learn, the Bermudas can claim the distinction of being the only tropical or neotropical islands of like size and lying at any great distance from the mainland which do not possess distinct and indigenous species. To be sure, the supposedly extinct "Cahow" was very probably an unknown species, but there is every reason to suppose that, like most sea-birds, it wandered over a considerable portion of the Atlantic and very probably bred in small isolated colonies elsewhere.* So also, Mr. Saville G. Reid speaks of seeing on several occasions a "small mouse-colored bird" in the marshes. No specimen was obtained, however, and there is nothing to prove that it was not some common American species,—probably one of the marsh-wrens.



BERMUDA BLUEBIRD.

noteworthy is the fact that several of them, as for instance Sabine's Gull, should have reached a small island far south of their continental range. Of course many of the species which have been observed but once were doubtless driven thither by storms and gales, while in other cases the identification is doubtful and leaves much to be desired. Another strange

The most striking bird of the Bermudas is the Yellow-billed Tropic bird, (*Phaeton americanus*); or "Long Tail" of the natives. These beautiful creatures arrive about March 25th and within a few days become exceedingly abundant. As many as 300 can frequently be seen at one time, flying about the cliffs or skimming the surface of the wonderfully colored water, the reflection from which causes their breasts to appear the most lovely and delicate sea-green. They are very tame and unsuspecting, flying close to moving boats and breeding everywhere, often within a few yards of houses or settlements. Their power of flight is remarkable, especially as they do not sail, but flap their wings rapidly and apparently with considerable effort. They are often observed more than 100 miles out at sea, and even mate while on the wing. The value of properly enforced bird protection is nowhere better exemplified than in the case of this bird. A few years ago the Tropic-birds were threatened with extinction from the Bermudas, whereas, since the passing of strict laws, pro-

*The Cahow, abundant when the islands were first settled, 1612-1620, was certainly not a shearwater.—A. E. V.

hibiting killing of birds or taking the eggs, they have rapidly increased until at present the number breeding yearly on the islands is calculated at fully 5,000.

The number of resident land birds is small and may be in part accounted for by the extreme scarcity of insects. Aside from the English Sparrow the only residents are the European Tree-sparrow, European Goldfinch, American Goldfinch, Wheatear, Mocking Bird, Bahama Ground Dove, Cardinal, Crow, Bluebird, White-eyed Vireo, Bob-white and Catbird. Of these the first five species have been introduced quite recently and are restricted to comparatively small portions of the islands. The Cardinal, Bluebird, Vireo, Catbird, and Ground Dove are abundant everywhere, and the Quail, owing to strict protection, is common and tame in all suitable localities, often coming into the chicken yards and feeding with the fowls.

The Cardinal, has, by former observers, always been considered as identical with the common American form, (*C. cardinalis*). This is partly due to the fact that for some reason there seems to be a general belief that the bird was introduced from Virginia. The oldest accounts of the islands, however, mention the "Redbirds" as common, and as long ago as 1848, Mr. Hurdis lamented the fact that the bird would soon become scarce if the large export trade in them was continued, and stated that he had seen as many as 500 about to be shipped to England as cage birds. In a series collected during March and April there seems to be a marked and constant difference between the Bermudian and common American forms, and I think it well worthy of being considered a distinct subspecies.

Cardinalis cardinalis somersii: Somer's Island Cardinal.

Ad. ♂. Lower parts brilliant orange-vermillion, brighter and more orange than the *C. cardinalis*. Upper parts also brighter and clearer deeper lake-red, the tips of feathers showing scarcely any traces of grayish. Wings and tail much as in *cardinalis*. Cheeks and crest-bright vermillion, sharply defined and not merging into darker red of neck. Bill deep scarlet, legs and feet amber-brown. Ad. ♀, lighter than true *cardinalis* especially on lower parts. Breast deep, buffy-yellow, belly almost pure white. Upper parts clear ashy-gray, with scarcely any trace of olive or brownish. Crest and ear-coverts strongly tinged with red, the longer feathers almost as bright as in the male. Capistrum deep blackish-gray. Wings and tail much as in male. Bill deep scarlet, legs and feet amber-brown. Length, 8.75. Wing, 3.75. Tail, 4.25. Culmen, 0.80.

Nest, as usual, but generally placed from 5 to 20 feet above ground. Eggs 3 to 5; 1.02 x 0.75 greenish-gray, thickly spotted and blotched with pale amber, ochre, blackish, and lilac.

The Bluebird as in the case of the Cardinal has until the present time, been placed with true *sialis*, but even before obtaining any specimens, I noticed that the Bermuda birds appeared larger and brighter, and upon comparing my specimens with a large series in the collection of Dr. Louis B. Bishop of this city, I find my original

impression borne out. As these birds are residents and have always been found in the islands, I see no reason why they should not be separated as a local race.

Sialia sialis bermudensis: Bermuda Bluebird.

Head, back, and upper parts much brighter than in *S. sialis* the blue being of a peculiar, brilliant, purplish azure, slightly brighter on rump. Tail and wings not appreciably different in color from the back. Breast, sides, and flanks deep purplish-cinnamon, much darker and richer than even Florida specimens. Chin, cheeks, and ear-coverts grayish-blue, sharply contrasted with rich blue of head and neck. Ad. ♂ duller and more brownish, (particularly on head), with



SOMER'S ISLAND CARDINAL.

brighter back and rump than true *sialis*. Throat and chin washed with pale buffy-cinnamon. Chest duller and paler than male, but much richer than either Florida or New England specimens of *sialis*, the color extending along sides and broadly on flanks. Orbital ring very distinct. No distinct malar stripe. Edge of wing, at carpal joint, distinctly pure white. Length 6.75 to 7.50. Wing 5 to 4.25. Tail 2.75 to 3.25. Nest usually, though not always, built in holes or crevices of rocks and cliffs. Eggs generally pure white, rarely tinged with pale greenish-blue.

The following species, observed during March, April, and May, 1901, have never, to my knowledge, been recorded from Bermuda.

Phaeton aethereus: Red-billed Tropic-bird.

Two or three individuals of this fine species

were repeatedly observed on Harrington Sound, notably in the vicinity of Trunk Island. Although seen within a few yards of the boat, no specimens were obtained, owing to the fact that the law does not permit shooting these birds, even for scientific purposes. The "zigzag" markings on back were readily distinguishable, however, and there is no doubt as to their identity.

Larus glaucus: Glaucous Gull.

When I first arrived in Bermuda, early in March, a large flock of Gulls rested nightly on the small, rocky islets in Harrington Sound. This flock numbered some 30 or 40 individuals in various stages of plumage. They were exceedingly wild and could not be obtained, but we repeatedly examined them through a powerful glass at a distance of not more than 200 yards. They disappeared, a few at a time, the last departing on April 28th.



BERMUDA GROUND DOVE.

Melanerpes carolinus: Red-bellied Woodpecker.

April 8th. One adult male was seen boring diligently in a Pride-of-India tree near the causeway, within a few feet of the road.

Columbigallina passerina bahamensis: Bahama Ground Dove.

All the Ground Doves observed and all the specimens obtained, belonged to this subspecies, neither male nor female showing any trace whatever of either red or yellow on bill.

Blue Jay, Red-shouldered Hawk, Thrasher, Orchard Oriole. Skins of the above were found among a number of birds procured at various times by different persons and presented to the Public Library in Hamilton. The collection also contains a nest of the Orchard Oriole, apparently proving that this bird bred in Bermuda on at least one occasion.

Passer montanus: European Tree Sparrow.

Common in certain portions of Paget Parish, notably on the high land between St. Paul's Church and Gibb's Hill Lighthouse.

Carduelis carduelis: European Goldfinch.

Abundant on the southern shores of the island, especially near Hungry Bay and in the vicinity of St. Georges, where they occur on both sides and in the interior. They are found throughout the entire width of the island, from Buildings Bay to the Crawl, but from the latter place to Smith's Parish Church they are rarely seen on the northern side, while from the last locality to Elbow Bay they are almost entirely confined to the narrow section along the south shore. Not observed to the westward of Elbow Bay. All the birds of this species are said to be descendants of some cage birds which escaped from a vessel wrecked near St. Georges about 15 years ago.

Spinus tristis: American Goldfinch.

Introduced about 4 years ago near Hungry Bay, and now not common in various portions of the islands.

Spizella monticola: Tree Sparrow.

A small flock of these birds was seen on several occasions near Hungry Bay, during the latter part of March.

Mimus polyglottos: Mocking Bird.

Introduced about 8 years ago at Bailey Bay. Seldom seen, but frequently heard in vicinity of Walshingham and Paynter's Vale. Two individuals observed March 20th and April 6th.

Sitta carolinensis: White-breasted Nuthatch.

One seen repeatedly in the cedar trees in the front yard at Harrington House April 15th to 30th.

Vireo, sp.?

On several occasions I observed a Vireo unknown to me in Paget and Warwick parishes and at Hungry Bay. Several of the residents had also noticed the birds and stated that they visited the island regularly. They were larger and more yellowish than the White-eyed Vireos and slower and more deliberate in their motions. The note, also, was quite distinct from that of any Vireo with which I am familiar. Possibly it may be one of our common southern species.

Dendroica pensylvanica: Chestnut-sided Warbler.

Dendroica striata: Black-poll Warbler.

Dendroica blackburnia: Blackburnian Warbler.

The three species were identified among a large flock of migrants, seen in Victoria Park, Hamilton, during the middle of March. (12th to 15th).

The Wheatear, *Saxicola ananthe*, recorded by Saville G. Reid, who secured two specimens, has been introduced within the last three years, near St. Georges, and is apparently doing well. A small flock was often seen on the barren hill-sides of Coney Island. Another flock of about the same number of individuals was observed on the neighboring shores of St. Georges Island.

THE BLUE GRAY GNATCATCHER.

BY WILLIAM PALMER, Washington, D. C.

Owing to its small size and swamp loving habits, the Blue-gray Gnatcatcher, *Poliophtila caerulea*, is a comparatively little known bird about Washington.

In spring it is rarely seen about the fields and away from swamps, but in the late summer they may be found, especially among low old field pines, in family flocks, which soon make their way southwards, and are rarely seen after the

with the birds of Washington, I had seen but a single nest and could learn of only two others. The best collection of local eggs did not contain it and there were no local specimens in the National Museum Collection, so this year, 1892, I determined to fill this gap in its local history and learn something of its nesting habits.

It should be understood that these observations are based entirely upon my experiences



BLUE-GRAY GNATCATCHERS AND THEIR NEST.
From mounted group at the Smithsonian Institution.

first of September. Were it not for its peculiar call note and song, it would indeed be but seldom found even by the most experienced collector; its small size, color and habitat all combining to render it inconspicuous.

Its nests and eggs seem to have been seldom found, for during an experience of twenty years

made on two days of this year and upon the five specimens referred to, and may or may not hold good for other localities. I spent the day of May 5th in company with Mr. E. M. Hasbrouck in the swamps about that point on the Alexandria and Mount Vernon R. R. known as the Dyke. During the day we noticed nine pairs of

Blue-gray Gnat-catchers and five single birds; but it was late in the afternoon before I found signs of a nest, this was nest number one on the diagram, and was then hardly more than begun. A few minutes later I found nest number two in a dead tree, and about half an hour later Mr. Hasbronck found number three in a cedar. These last nests were finished except the lining on which we found the females busily at work.

On the evening of May 11th, we again visited the locality expecting to get the eggs and nests but met with disappointment, boys having evidently found and poked down nests one and two, while of number three the male bird had been accidentally killed on our first trip, and the female had deserted the nest.

On May 13th, I determined to try again, and this time spent the day in the woods immediately north of Mount Vernon. Late in the afternoon I found nest number four, and soon after number five. Each of these contained five eggs, several of each set being fairly well incubated.

The interesting occupation of nest building can be observed by simply keeping quiet. Both birds work industriously and usually arrive together at the site with material; one will then deposit its load and shape it while the other sits patiently by awaiting its turn. While the nest is building the bird stands in the center of the site selected and deposits the material as far as it can reach, then moving its head first on one side and then on the other stretching the material over a small arc of a circle the radius of which is determined by the somewhat flexible length of the bird from its center of gravity to its bill.

When the body of the nest is completed small pieces of lichens are fastened on the outside with spider webs, so that the entire outside of the nest, the rim and a little of the inside especially around the rim are completely covered with these small pieces of lichens all with very few exceptions being placed right side out and right side up. While nest building the birds, especially the males, keep up an almost continual twittering or chattering, in fact it would seem that the male would rather sing than work thus leaving more than half to be done by the female; but I did see the males do some work though only the females were seen to do the finishing part.

The bulk of the nest is constructed of the fine branches of the flowering parts of grasses mixed with the woolly parts of various plants and the glumes of grasses, the whole held together and bound by the liberal use of spider webs. The lining consists of fine grass tops, some woolly fibres and a few feathers from the birds themselves.

The birds work incessantly until the nest is completed; eight visits have been counted in fifteen minutes. The lining is completed last and the nest is then ready for the eggs.

In examining a series of Blue-gray Gnat-catchers one is impressed with the fact that there is almost no variation among them.

It seems to be what might well be called a finished species and in its habits, song and shape is distinct from any other species of our avifauna.

The nests are all built on the same plan and of the same materials, and are as near as nests can be exactly alike; but between certain extremes there is quite a variation in the size and markings of the eggs which may possibly be due to the different ages of the individuals laying them.

In the selection of a nesting site however, do we find that the birds display a great deal of variation, ingenuity and possibly selective ability.

The locations of the nests were as follows:

No. 1, on oak at edge of swamp, 15 feet from the ground.

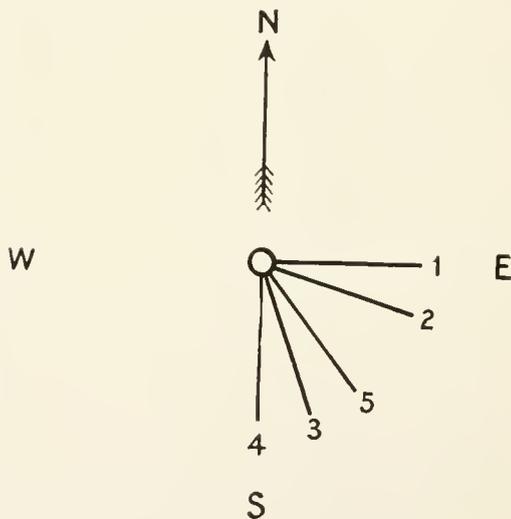
No. 2, on top of dead tree in wood near water, 18 feet from the ground.

No. 3, on cedar 100 feet from water, 10 feet from the ground.

No. 4, on nearly dead oak in swamp, 25 feet from the ground.

No. 5, on oak over path near water, 15 feet from the ground.

It was especially noticed that four of these nests were placed on more or less horizontal branches in such a way that one or more smaller branches crossed over the center of the nests only a few inches above, in the same direction as the nest bearing branch. Nest number two, placed in a crotch by the side of the trunk, had the small branch passing through the rim of the nest and prolonged for some distance in a nearly vertical line.



LOCATION OF BLUE-GRAY GNATCATCHER'S NEST.

The object of such placing of the nests may possibly be protective as seen from above, these nests being invariably placed on the lowest branches of the trees.

The branches over the nest would possibly prevent a would-be marauder from seeing the eggs or sitting bird. It is by looking downwards that most birds procure their food and thus nests so placed may be unseen by a Jay.

Crow or other animal passing overhead and the safety of the nest be assured. In only one of these nests was there any possibility of mimicry as seen from below or sidewise, number four being the only one having lichens anywhere on the tree, except on the nest.

The female sits on the nest at right angles to the direction of the branches, and thus probably feels safer in having an umbrella over her during her nesting labors, and can the more readily slip out of the nest when necessary.

We have in the Blue-gray Gnatcatcher a delicate little bird small of body, and with long plumage. It builds a nest constructed as well as possible to retain the heat of the sitting bird, but even this is probably not enough to ensure the hatching of the eggs, so the species has apparently adopted two other means to assist in incubating, one of which is common to many birds.

If we make a composite photograph of the sites of these five nests and compare it with the points of the compass we shall find that what at first sight looks like chance location as regards direction assumes a possibly intentional selection on the part of the birds of a site with reference to the sun's rays during the early or greater part of the day. These were so placed as to receive the earliest sunlight; possibly on the other side of the river an opposite direction might have been adopted.

TENANTS OF UNCLE SAM.

BY PAUL BARTSCH, Washington, D. C.

No place about Washington offers greater charms and opportunity to the bird-lover than the government reserve known as Rock Creek Park. Particularly attractive at this season is the region which comes more directly under the control of the Zoological Park. Its easy access, its splendid roads and paths, and romantic, rugged surroundings all conspire to make it the favorite haunt of every one, while the protection afforded to bird and beast within this area has gained for it a fauna scarce to be rivaled anywhere.

The part of the Zoo which has held our attention mostly, is the region from the high bridge which spans the creek at Cincinnati street to the rustic wagon bridge, and from the east fence to the western slope—an area not more than a fourth of a square mile in extent. But within this area we have land of various altitudes ranging from water level to the hill tops of a hundred and fifty-five feet elevation.

A broad well-kept macadamized road winds its way down from the southeast gate to the waters' edge, where it branches, and one part turns back, southward, crossing the creek by a ford, while the main portion passes to the north and spans the stream with a rustic bridge a little beyond its first bend, then follows it more or less, in its sinuous curves.

Just below where the ford crosses our stream a series of stepping stones enable the traveler on foot to reach the opposite bank, from where a woody winding path, a splendid "birdy place," will lead him about the base of the western hill to the farther end of the rustic bridge. Still

It should also be borne in mind that these nests are not so placed on trees that they are protected from the sun by a thick canopy of leaves. During the first half of May when these birds are nesting there are in such localities no leaves to speak of, and two of the nests, numbers two and four being on dead trees could have no leaves over them. The lichens probably serve the purpose of retaining, at night a portion of the heat received during the day or at least of preventing its rapid radiation, and may also serve to prevent the escape into space of the birds, own warmth.

Another point in the nesting economy of this species is that the female rarely leaves the nest, but is fed by the male. She invariably rewards him for such service with a simple, quaint song which was the means of my finding the last two nests.

The nest shown in the picture was number 4. It is the finest piece of bird architecture that I have seen, and is now on exhibition in the collection of the National Museum. In regularity and neatness of structure it is perfect and cannot be excelled. It measures $2\frac{9}{16}$ inches in diameter, is $2\frac{7}{16}$ deep; the opening is $1\frac{1}{4}$ inches across while the cavity is $1\frac{1}{2}$ inches deep. The diameter of the cavity is much greater, possibly an inch, than the opening.

another path with broad boarded walk trends northward, immediately after one enters the southeast gate and takes one, by a short cut, down many a step to the animals and the second wagon bridge.

The entire area under discussion, excepting the lawn which follows the road from its fork to the rustic bridge, and the immediate region about the gate, is well wooded every effort having been made to leave undisturbed all the natural features which the ground presented; that birds, beasts and plants might flourish without the sad influence of all-civilizing man.

We made many an early morning excursion to this field in early spring, and watched the birds returning one by one, some to stay while others rested but for a brief period, then continued their journey to the north, whither fond hopes of a happy home irresistibly drew them.

Midst all this bustle and commotion some of our summer residents settled down to household duties, and long before the last Black-poll Warbler had left our terrain Phoebe's young had learned their first lesson on the wing.

On the ninth of May a member of my class pointed out the first Blue-Grey Gnatcatcher's nest for this season. It was situated in the large birch, at the waters edge, perhaps a hundred yards north of the stepping stones, on the left bank of the creek. The site selected was a charming one, commanding a view of the stream as well as the road with its bordering lawn. The nest seemed incomplete, that is, not a bit of the usual lichen ornamentation had been bestowed upon it, and both birds were whisking

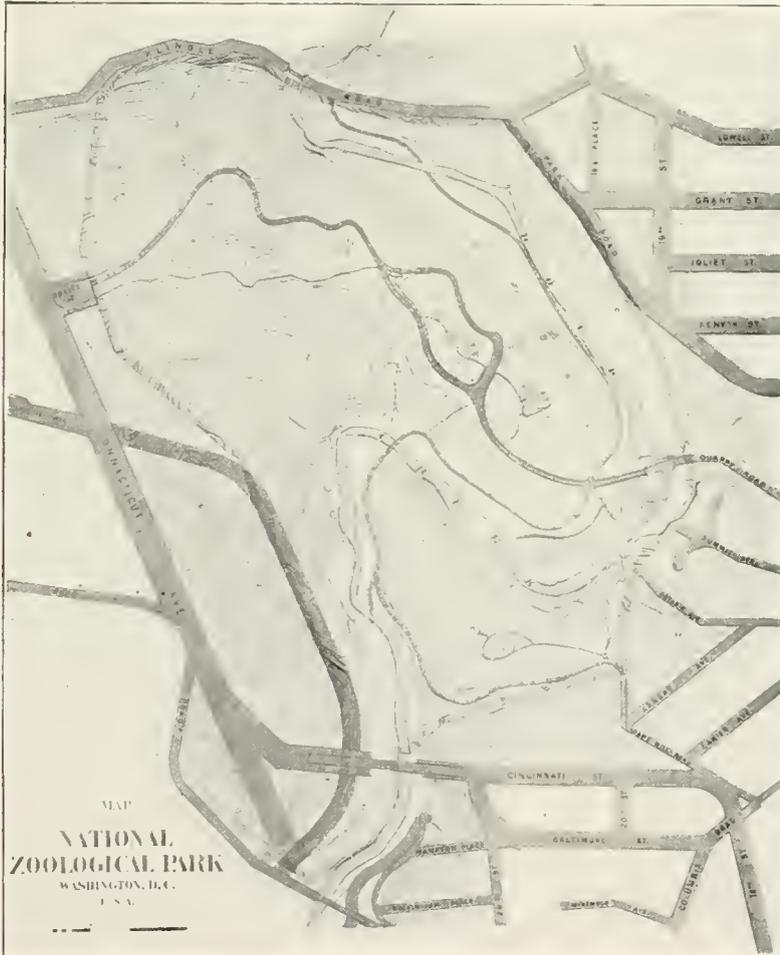
friskily about the top-most branches of the tree uttering very frequently their characteristic lisped *zee zee*.

A sudden shower forced us to seek refuge beneath the rustic bridge where we had ample opportunity to examine the Phoebe's nest with its four immaculate eggs, which was fastened to one of the supporting cross-beams. The rain drenched everything so effectively that further exploration seemed undesirable for the day,— but in spite of the unfavorable weather we registered a list of forty-three species.

On the fourteenth, I had the pleasure of conducting such members of one of the sections of

are not among the class of early risers. The class was composed of the most energetic students that I have had the good fortune to meet. There seemed to be not one among them who was not a thoroughly enthusiastic lover of birds.

We were listening to the morning prayer of a Rose-breasted Grosbeak, perched way up in the top of a large tulip tree, his red breast turned toward the morning sun, when one of the flock came running and breathlessly related that she had found a nest,— on the ground— a small nest— belonging to a small black and white bird. We followed and scarcely fifty feet from where the



the Washington Normal School on a field trip as were willing to be at the meeting point, the loop of the seventh street cars near the Zoo entrance, at 6:30 a. m.

To my great surprize the flock was not a small one for be it remembered that Washingtonians

Grosbeak sang, we saw, midst a bank of old dead leaves, a home of the Black and White Creeping Warbler. A neat little nest most admirably concealed by its inconspicuousness. It was chiefly composed of dead leaves, bast fiber and shreds of bark with a lining of fine rootlets.

grasses and hair, containing the five beautifully speckled eggs. There was no mistaking their identity for Mrs. Creeper was present to claim them. She was always present whenever I visited the place later and ever willing to have her picture taken while at home.

The opposite was true of her husband whom I never chanced to meet. He was never at home and though I tried my best to provoke his presence he never appeared upon the scene. I am sorry to say that only four of the five eggs gave rise to young Creepers on the 26th of May, the fifth proved infertile, and I must also state that I was thoroughly happy when I noted on the 6th

by a Wood Thrush, which had placed its nest out on one of the lower boughs of a beech.

The Redstarts, Yellow-throated and Red-eyed Vireos failed us likewise. But the Ovenbird was still faithful to her charge and guarded carefully her over-arched nest with its four eggs, just across and a little north of the stepping stones, not four feet from the path. I do not understand why Aurocapillan reasoning should select such open sites, but my experience has taught me to look for their nests in open places, which seemed to afford less shelter than many others which to me appeared more suitable, and better protected.



THE OVENBIRD'S NEST

of June that this dear faithful little mother had led her four young from the ever impinging confines of their cradle into a world all new to them. Even now when I meet the Creepers in this end of the park I feel that it must be my company and wish them well, wondering if they too remember the many times I placed my camera in position, to note most effectively the progress they were making in their cozy nest on the deeply shaded hill-side.

On the 23d we met at the loop, loaded for pictures. Striking immediately down the steep embankment we looked carefully for the Acadian Flycatcher's nest among the branches of the spreading beech trees, but were rewarded only

This nest was well arched over with dead grasses, in fact, appeared just like a bunch of dead grass, but the low opening at one side told a different story—well recorded in the accompanying picture.

We recrossed the creek next and spent a long three quarters of an hour with the Blue-Greys. Mrs. was at home, but left the nest as I was climbing the tree. She remained nearby however, and appeared less nervous than I was, while I attached first one, then another of the legs of my tripod to this and that, and a neighboring twig, while standing on a small swaying branch some 18 feet above the water. The tripod was finally fixed and lent some rigidity

to the camera, which a mere clamp fixed to a single limb would not have done. The use of cinch-clamp is almost an absolute necessity under these conditions, for without it I doubt if I would have succeeded in getting my camera in position.

There were four eggs in the nest, but it was impossible to rest the camera in any other position than the one shown in our illustration so we were satisfied to simply obtain a picture of the nest, and even this seemed rather doubtful for the bright sunshine was filtering abundantly through various portions of the branches and rendered the illumination rather doubtful, the more so since it was necessary that the lens face toward the sun. This was about 7 a. m. I stopped down to 64 and gave a 15 second exposure, and the negative proved to be a fair one.

While I slipped the slide into the plate-holder, Mrs. Blue-Gray returned to her domicile, and unceremoniously dropped down into the deep cup until nothing except the head and pertly cocked up tail were visible. Two more exposures were made both of which proved to be fair negatives, one of which is here reproduced. The smallness



THE BLUE-GRAY GNATCATCHER ON HER NEST

of the picture is due to the too great distance between the camera and the bird, but a common 4 x 5 camera can do only what it is able.

The nest seemed an exception to all those which I had observed in previous years, differing from them in the fact that it was entirely lacking the usual lichen ornamentation, and I wonder if the absence of lichens on this tree caused the birds to leave their nest unfinished as it were, to give it greater protection. The selection of the immediate surroundings is a pretty one. Some time during the history of that limb

it lost its terminal bud which arrested its progress; the adjacent buds sent out small branches, the lowest one of which forms the base for our nest while the upper ones act as a canopy, as shown in the picture.

We next visited the Black and White Creeper's nest, took a picture of it, then examined a Cardinal's home not twenty feet from the Creeper's, in the down bent vine entangled tree near the south fence, not more than a hundred feet from the gate, and found that it contained three eggs. The nest was so well concealed that it was impossible to see it from below while the stump was too rotten to invite one's weight. We therefore left everything undisturbed, and the nest to the anxious pair of Cardinals, complimenting them on their selection of the site.

Then we visited a Phoebe's mossy castle, built on a rocky ledge beneath the little stone-arch bridge, at the bottom of the boarded path, and photographed its cup, brimfull to overflowing. The young were all attention and flattened down completely, played possum, and after taking a picture of them in this position I placed my finger near them, and like a flash the entire company took to their wings and left the place deserted.

Since then we have located a Brown Thrasher's a House Wren's and a Red-eyed Vireo's nest in the little cemetery near the south gate. Two Cat Bird's nests and one of the Wood Thrush near the bank of the stream between the rustic bridge and the boarded footpath. Another Cat Bird's nest near the road, about half way between the Blue-Grays and the rustic bridge. Another one of Acadian Flycatcher on the hill side between the high bridge and the stepping stones. A Yellow-throated Vireo's across the creek near the Ovenbird's in the first large beech tree. An Acadian Flycatcher's just a few yards beyond swinging gracefully on a little branch out over the path. Between this and the bridge we have located another of the Black and White Creeper, the Cat Bird and one of the Flicker.

Other birds which no doubt are at present nesting here or have nested here but whose home we have either neglected to look for, or failed to find are the Song Sparrow, Carolina Wren, Tufted Tit, Yellow-breasted Chat, Chickadee, Great Crested Flycatcher, Louisiana Waterthrush, Spotted Sandpiper, (?) Redstart, Indigo-bird, Yellow Warbler and the Maryland Yellowthroat. These birds have been ever present upon our visits, and we feel quite positive that one or more nests of each may be located in this place. It will be interesting to go over this ground in fall, when the leaves have left the trees and shrubs, and count the many nests which escaped our notice at this season, and wonder how it was possible that such a nest in such plain view could have been passed as often without being detected.

THE OSPREY OR FISH HAWK; ITS CHARACTERISTICS AND HABITS. V.

BY THEODORE GILL, Washington, D. C.

Continued from Vol. V, p. 76.

A pair of Ospreys that built on a pole nest in Bristol, R. I., raised in 1895 "a brood of seven young. On the 11th of June, two of the nestlings, about the size of squabs, were picked up dead under the nest, and on the 26th of the same month another young bird was also found dead at the foot of the pole. In the latter part of July the nest contained four almost fully fledged young."* Mr. Howe thought that "the seven eggs must have been laid in seven or eight days," but gave no reason for so thinking. It may be suggested as at least possible that a former tenant of the nest may have been killed after having laid her full quota of eggs, and her surviving mate obtained a new partner just prepared to add to that quota. The conditions in any case must have been very unusual.

Four eggs have been frequently found in a nest. Mr. M. B. Griffing "from one nest on Gardiner's Island * * * took sets of four eggs in two consecutive seasons; and in other nests" saw four eggs one season and three the next.†

INCUBATION.

Whether the male assists in incubation is a matter concerning which different statements have been made.

Audubon believed that "the male assists in incubation, during the continuance of which the one bird supplies the other with food, although each in turn goes in quest for itself." Audubon is the only original authority for the allegation.

Most authors and the latest Bendire especially—tacitly or specifically assert that the female alone sits upon the eggs.

The sitting bird is supplied by its mate with requisite food, "though she occasionally takes a short circuit to sea herself, but quickly returns again." The attention of the male on such occasions is regulated by the circumstances of the case. A pair of these birds, on the south side of Great Egg Harbor river, [N. J.,] and near its mouth, was noted for several years" and commemorated by Wilson. "The female, having but one leg, was regularly furnished, while sitting, with fish in such abundance, that she seldom left the nest, and never to seek for food. This kindness was continued both before and after incubation."

The attention of the Osprey to its nest has been variously described. One ornithologist, indeed, has contradicted himself on adjoining pages of the same work (Seebohm i, 60, 61), in one paragraph stating that "the Osprey is a shy bird at the nest, and usually leaves it at once on the approach of a stranger" and, on another,

that, "like many other birds of prey, the female Osprey is not easily scared from the nest."

The truth seems to be that as a rule, (perhaps with frequent exceptions,) the bird flies off from its eggs on the approach of a man and makes no demonstration; but when its young have been hatched out, it is less disposed to yield and will frequently not hesitate to threaten or even attack the intruder.

But even the eggs may be boldly protected. Wilson was informed by a correspondent of a man who was impelled by curiosity to go up a tree to "look at the eggs" in a nest, that "the bird clawed his face in a shocking manner; his eye had a narrow escape." This correspondent was nevertheless told that "it had never been considered dangerous to approach a Hawk's nest."

According to Professor Bumpus (A. N., iv, 585) "as one approaches their nest the bird stands up, whistling a shrill peep; on coming nearer it rises and after a circle or two sometimes re-aligns, inspects its eggs, and if the intruder does not withdraw, the cries of distress bring the male, after which both birds circle over the nest, the male higher and showing less anxiety than the female."

They do not always confine their demonstration to cries and threats. Occasionally perhaps often they will boldly attack the would-be thief of their eggs or young.

Wilson also testified to its boldness when it has nestlings to take care of. "On the appearance of the young, which is usually about the last of June, the zeal and watchfulness of the parents are extreme. They stand guard, and go off to fish, alternately; one parent being always within a short distance of the nest. On the near approach of any person, the Hawk utters a plaintive whistling note, which becomes shriller as she takes to wing and sails around, sometimes making a rapid descent, as if aiming directly, for you; but checking her course, and sweeping past at a short distance over head, her wings making a loud whizzing in the air". "Incubation is said to last about twenty-one days," but Bendire was "inclined to believe that it is nearer twenty-eight." He neglected to assign any reason for his belief.

NESTLINGS.

The newly hatched young or nestling has a close dense covering of short down; the color of this down is mostly sooty or even black, but on the head and sides of neck is relieved by grayish longish tufts (arranged in a linear mass and covering the down) and along the back from nape to tail by a wide whitish stripe; tufts of a grayish or whitish color also diversify the back;

*Howe, Auk, xii, 381.

†Griffing in Bendire, I. H. N. A. B., i, 321.

‡It was not stated whether the eggs were actually seen, and it is possible that they may have been hatched.

the abdomen is of a dirty white hue and the thighs are immaculate white on their inner surface.

While this appears to be the usual condition, it is not invariable. Professor Collett found two Ospreys about eight days old, taken from a nest in Norway, which "were different both in size and colour," and communicated his observations to Dresser. The biggest (220 millimetres long) "was enveloped in *black* velvety down, but not thick. In the down the white shafts of the feathers (the extremities furnished with downy tufts) could be plainly distinguished; on the head all the shafts were black. The smallest of the nestlings (187 millims. long) was covered with *white* down, the colour on the back only being black; above the eye and extending backwards towards the region of the ears was a blackish stripe; shafts of feathers indistinct." (Dresser, vi, 140.)

THE OSPREY SUBJECTIVELY CONSIDERED.

In America the Osprey is frequently a victim to the assaults of larger or swifter birds. The Bald Eagle is a notable assailant and has been often observed to attack the bird and compel it



A PAIR OF YOUNG OSPREYS.

to drop its prey. A less known enemy and, in fact, only described as such by a single observer, is the Frigate-bird.

In Europe there is no redoubtable enemy like the eagle and the bird is not compelled to surrender its prey to any other.

In India, however, the Osprey is also compelled to act as a food-provider for an Eagle kindred to the Bald-headed—the White-Bellied Sea-Eagle

or *Haliaeetus leucogaster*, a species about as large as the Bald-headed. Although this "lives chiefly on fish and sea-snakes which it captures from the water," it is reported by Blandford (as well as others) that "it not unfrequently robs the Osprey of its prey."

OSPREY DRIVERS.

In many parts of the United States the Osprey is to a considerable extent the enforced food-finder for the Bald-headed Eagle. This suberviency has been witnessed and recorded by observers in various places although perhaps an undue idea of its frequency has been encouraged by somewhat exaggerated accounts. One of the most recent (Judge J. N. Clark of Saybrook, Conn.) communicated his observations to Bendire. He lived "about 2 miles from the sea shore, and one of the matters of daily observation [such are Mr. Clark's words] is to see an Osprey wearily bringing a heavy fish from the sea and passing on toward the woods where invariably one or more Bald Eagles are waiting to seize the prey it brings. A few futile efforts to escape, a few notes of remonstrance, and it surrenders to superior prowess, and again returns to the fishing grounds, only to repeat the same weary round over and over again." The observer thought that "experience seems to teach nothing to these birds."

On the Pacific coast, the Osprey is also a victim to the attacks of the Eagle. Peale, as far back as 1848, called attention to the fact that "on the Columbia river, they appeared to be annoyed by the great numbers of Eagles, which are constantly plundering them of their food, and in consequence, they are obliged to seek more retired fishing grounds."

In subtropical regions, another tyrant, even more cruel and feared than the Bald Eagle, may compel the Osprey to serve as its fisher, if we can credit the account of Mr. I. Lancaster. At least attention may be drawn to a subject that requires future inquiry.

The Frigate-bird (*Fregata aquila*) was seen making repeated assaults on the Osprey in Southern Florida by Mr. Lancaster, and his results have been published in an animated account of "the torture of the Fish-hawk" by that bird in the American Naturalist (1886, p. 223-230). Mr. Lancaster's observations were made in February and March while studying "the mystery of the flight of soaring birds." Some may be inclined to divide the perturbation of the Osprey between the imagination of the historian and the bird, but the account is at least very readable. His observations were made about Charlotte Harbor on the west coast of the peninsula. The birds which particularly interested him were the Fish-hawks. "These birds are arboreal in their habits, nest in the tops of the pine trees and rarely resting on the ground.

(To be Continued.)

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Comments.

THE TREND OF THE POPULAR ORNITHOLOGICAL MAGAZINE.

We were recently called upon to consult a copy of one of the popular bird papers published some twenty years ago, and were much surprised to note the difference between this and the more recent productions belonging to the same category.

Judging from a comparison of these copies it would seem as if a truce had been framed between man and the birds, for our magazines are no longer bulletins from the field of battle, relating how John managed to kill by his superior prowess and latest improvement in shooting iron, so and so many birds. Or how "A" side of the S. Field Club managed to bag twenty more birds in their cross-country tramp than "B" side and thus win the honors of the day at the cost of many a happy, useful life. Nor do they chronicle glorified accounts of hundreds of eggs taken and bird homes destroyed. Such records as these, if at all made to-day, are kept as con-

scientiously as state secrets, and do not longer stain the pages of our magazines. The blood and thunder days together with those of the embryo hook, have given way or are giving way to the more esthetic side of bird study. We seem to be emerging above the mere collecting or amassing craze, and are beginning to view the birds from a more philosophic standpoint. Instead of killing or robbing them, we bid them welcome to our lawns and shrubbery, and enjoy far more keenly the gold of the oriole's breast as he swings near his pendant nest and voices his happiness and delight than we cherish either nest or bird locked up with numerous others in the dark confines of our closet—or the bird in a pot-pie.

Another very striking difference is the change in illustrations. In the days gone by they were entirely lacking or when present usually of the wood-cut kind, while to-day we have most beautiful pictures of birds and their homes, absolutely true to nature (for the camera is said to tell no lie,) accompanying our sketches.

The reduction of camera prices has created a new field. Bird-photography, a most delightful field, one which has caused many a person to exchange his gun for this implement whose victims are never injured, and the game if well shot, is an everlasting pleasure.

We hope that these improvements of our magazines are an index to human nature and will continue in the direction which they seem to follow at present.

Dr. Theodore N. Gill, the chief editor of the OSPREY is at present enjoying a tour abroad. He sailed from New York on the "City of Rome," June 1st, and arrived in Glasgow, Scotland on the 9th.

Doctor Gill represents the Smithsonian Institution and the National Academy of Sciences, at the Jubilee celebration of the four hundred and fiftieth anniversary of the University of Glasgow and bears with him formal congratulations of both institutions, the one of the Smithsonian being a beautifully engrossed copy, done by Tiffany & Co. of New York.

Doctor Gill will visit the principal cities of Scotland and England, then make a trip to the continent, do Norway and Sweden, after that he will call upon some of his scientific friends in Germany, France and Switzerland, and after a short visit to the zoological station at Naples will return to Washington.

We wish the Doctor a very pleasant trip.

Literature.

CHAPMAN ON THE MEADOW LARKS.*—Mr. Frank M. Chapman has here attempted the study of the facts connected with the geographical distribution and systematic values of the forms of this genus, but evidently, as he admits, with inconclusive results. Nine subspecies are recognized: *magna*, Eastern United States; *argulula*, (doubtfully) Southern Florida; *hippocrepis*, Cuba; *mevicana*, temperate Mexico; *inexpectata*, East Coast Central America; *alticola*, Pacific Coast of Southern Mexico and Southward; *meridionalis*, Northern South America; *neglecta*, Western United States; *hoopesi*, Lower Rio Grande. Mr. Chapman's study of 734 specimens of these forms are ably contrasted, but his results will hardly meet with general approval. While the larger portion of the paper is given to a consideration of the subspecific validity of *neglecta*, the real problem of the paper, the island form *hippocrepis* is dismissed with a few lines, its status as a subspecies being determined by considering certain variations, not mentioned, as bridging the gap between it and the South Florida bird. "Individual variation" is the convenient term employed to justify a trinomial, but it may well be doubted if a few faulty individuals, most evidently immature or typically imperfect, occurring with the typical birds of a large island area, can be properly used as a criterion of geographical intergradation. The Cuban bird lives on the driest and poorest areas of the island and its color values and markings are far more characteristic of *neglecta*, as formerly considered by Mr. Chapman, than of the South Florida bird with which it agrees only in size.

Mr. Bangs' *argutula* is considered as purely Floridian in contrast to that author's use of the name to cover the Gulf Coast and Lower Mississippi valley birds. Evidence for considering *magna* and *neglecta* as intergrading is found largely in a series of 30 specimens collected at Corpus Christi in April, 1891, and these specimens are elaborately compared and discussed. The meeting of these forms in the Mississippi Valley is well described, and the following summary given: "It appears from this review of the available material from the regions where the ranges of *neglecta* and *magna* come together, that in the Mississippi Valley, between the meridians of 90° and 100° both *magna* and *neglecta* are typically represented, that they are sometimes found associated during the breeding season, that their ranges overlap for a distance of several hundred miles, and that intermediates between them, while not proportionally common, do occur, sometimes in connection with typical representatives of both forms. In Southeastern Texas, at Corpus Christi, the fusion of these birds seems to be more complete, though it is not probable that both forms breed there."

Tho' Mr. Chapman has had a far greater number of specimens to deal with than earlier writers he says: "It should be stated at the outset, however, that the material to which I

have had access is far from satisfactory; and an explanation of the facts it apparently presents is to be regarded only as provisional. We need large series of breeding birds from Northern Mexico, taken by a collector who is thoroughly familiar with the points involved, before we can reach conclusive results."

Of the "intermediates" after considering a number of specimens, Mr. Chapman sums up, "Opinion would no doubt vary in regard to the exact determination of these specimens, but as a series there can be no doubt that they prove the complete intergradation of *magna* and *neglecta* in Southeastern Texas. Whether this intergradation is geographical, that is, correlated with climatic condition, or whether it is due to the interbreeding of typical examples of *neglecta*, can only be determined by further field work."

Mr. Chapman's opinion of the systematic value of *neglecta* seems largely influenced by his assumption (p. 318) "that Meadow Larks originated in the humid tropics" south of the Mexican table lands. But it may be suggested that such a strongly specialized aberrant genus as *Sturnella* inhabited North America in preglacial times. We know the antiquity of the mountain masses of both sides of the continent and it may well be that the ancestors of both *magna* and *neglecta* inhabited opposite regions, as now, before they were driven northward by glacial effects. Moreover the strong terrestrial open area habits of the genus precludes their having originated in a humid tree covered region. It seems much more likely that elevated or sub-boreal treeless areas in preglacial times permitted the differentiation and specialization of this peculiar genus apart from its nearest relatives. The return northward since the retreat of the glacial ice and the filling of the Mississippi area has undoubtedly permitted the conditions which now perplex the systematic ornithologist especially when he confines his attention almost wholly to dry skins. The similarity as far as known of preglacial fossil birds to the bird life of today in similar regions of America is a strong factor in favor of the idea that the Meadow Larks inhabited what then existed of North America. A contrary view is hardly tenable. The genus is purely Nearctic and is undoubtedly much older than the beginning of the glacial epoch.

The intermediate birds of Corpus Christi, the breeding home of which is unknown, if indeed their progeny is fertile which is equally unknown, may be simply hybrids and we may have a similar case to that of *Colaptes cafer* and *C. auratus* tho' as the birds are so different the weaker values of the Meadow Lark characters may prevent as easy a determination of hybridity as in the Flickers.

Mr. Chapman considers the song of little value for determining the specific distinctness of these birds.

The great interest shown in late years regard-

*Study of the genus *Sturnella*. Bull. Am. Mus. N. H., Vol. xlii. 1900, 267-320.

ing the values supposed to separate or unite *magna* and *neglecta* must be our excuse for quoting the following interesting extract from Mr. Chapman's paper.

"If the assumption of the origin of both birds from a common ancestor be accepted and if their geographical intergradation at the southern limits of the range of *neglecta* be established, we are then in a position to explain their apparent association as species in the more northern parts of their range, on the ground that while their ranges originally diverged like forks of a Y, the ends have finally come together, not as geographical intergrades, but as two forms, both of which have occupied the region where they are found associated at so recent a date that neither shows the effect of the climatic conditions under which it lives, but exhibits the characters earlier acquired.

"In the Mississippi Valley, therefore, we have the apparent anomaly of two geographical races or subspecies of the same species breeding at the same place, and occasionally associated with them, are certain intermediate specimens showing in varying degrees the characters of both extremes.

"Since it is out of the question to suppose that the same environment could produce three phases of the same species at the same place, that is, *neglecta*, *magna*, and intermediates between the two, we can only suppose that such connecting specimens are not geographical intergrades but the results of a union between *neglecta* and *magna*. In fact, loosely speaking, these connecting specimens would be termed hybrids, but, accepting as a definition of this word 'the offspring of animals of different species,' it is evident that in a strict sense it cannot be applied to these intermediates, which are the progeny of parents not specifically distinct."

Probably few ornithologists who are familiar with the localities where both these birds breed together will accept Mr. Chapman's concluding sentence in the above extract.

Unfortunately there is a great habit among systematic ornithologists to work upon the idea that the colors of birds are the results of distinct environmental climatological conditions instead of being the result of climatological food conditions plus other factors of less importance.

A number of contrasting photographic reproductions of skins and feathers of *neglecta* and *magna* accompany Mr. Chapman's paper.

To sum up, Mr. Chapman's evidence concerning intermediates is equally effective for the theory of hybridity especially if we give due weight to the specialization of the genus, its evident antiquity and the strong probability that it was a resident of both sides of a Mississippi sea before glacial times. Evidently much has yet to be learned of the distribution of these birds in Central America toward which Mr. Chapman's paper will prepare the way.—W. P.

THE BIRDS OF MASSACHUSETTS, by Reginald Heber Howe and Glover Morrill Allen. Published by subscription. Cambridge, Mass. 1901.

In this little work embracing some 154 pages of 8vo. size we have another annotated list of Massachusetts birds. This is the ninth of its kind which has appeared for the state in the last seventy years, and is intended to bring the subject down to date.

The book is divided into the following chapters: "Preface," "The Faunal Areas," which designates and defines them, and gives a list of the characteristic birds of each. An "Explanatory Note" follows which refers briefly to the source of information. Then comes the Annotated List of Species." Here we find a marked variance with the A. O. U. Check-list, as the classification adopted, is that of Sharpe and Ridgway. We thus find the Canada Grouse placed at the bottom of the list, while *Coccothraustes vespertinus* occupies the most exalted position. The authors have also indulged in emending some generic names or adopting the emendations of others and have substituted *Nyroca* for *Aythya*, and *Hylemathrus* for *Troglodytes* without giving an explanation.

Three hundred and twenty species and forty-two subspecies are included in this catalogue, which gives "the status of each species, then the dates of arrival and departure of species, in Massachusetts," followed by annotations taken from published lists and notes.

This list is followed by one of "Extirpated Species," including the Turkey, Whooping Crane, Sandhill Crane and Trumpeter Swan.

The next chapter deals with the "Extinct Species" and embraces the Great Auk and Labrador Duck.

In the list of "Introduced Species" we find that various parts of the globe have contributed to swell the list of Massachusetts records, no less than fifteen species being recorded.

The list of "Species Erroneously Recorded" is an interesting one, but we believe that some of the seventeen species placed here might well have been referred to a list of doubtful records.

The next chapter deals with the "Apocryphal Species" *Picus phillipsii* Aud. and *Muscicapam minuta* Wils. "Recapitulation". Then comes a Bibliography dating back to 1833 which consists only of faunal lists, exclusively of Massachusetts. This is followed by a double index the first of scientific, the second of vernacular names.

Ten birds recorded in the last list of Massachusetts birds have been dropped, and twenty-two have been added.

The copy is a neat one printed on good paper, its information is clear and in condensed form. We are sorry to note that the edition embraces only five hundred copies.—B.



A GLIMPSE OF DOLLAR ISLAND.

THE OSPREY.

An Illustrated Magazine of Popular Ornithology.

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Original Articles.

CAMPING ON THE OLD CAMP GROUNDS.

BY PAUL BARTSCH, Washington, D. C.

In Number 22, of the Wilson Bulletin we recounted the pleasures of "An Afternoon amongst Old Scenes," and now we will attempt to give an abbreviated sketch of a two day's trip to Dollar Island, one of my favorite spots near Burlington, Iowa.

In 1895, while working up the fall flora of the lower Skunk River Valley, I selected this gem of an island as a basis from which to direct my researches.

I planted my tent on the 1st of August, and pulled up stakes October 22. It was one of the most delightful outings that I have ever experienced.

Picture to yourself a small island, round as a dollar, some quarter of a mile in diameter; washed on the east by that grand old stream,

abundant in the interior, where their branches spread and interlace to such an extent as to make a second growth, or vegetation of any thing but the shade loving species, an impossibility. The border, however, furnishes thicket and tangle and on the southwest side we even have a sand bar which is densely covered with a low growth of willow, marigolds and the much beloved sandbar (*Cenchrus tribuloides* L.).

Dollar Island forms the inner of the Twin Islands, and has of late years been joined to its sister by a dam which is supposed to help fill the channel with sand to obstruct navigation. Whatever its purpose or result, it certainly has one great redeeming feature and I will always praise the engineer who dared to turn the Mississippi from its straight course, for many a pleasant hour which we had not anticipated, did he create for me and some friends, playing catch with the finny tribe.

From this dam one has a wide view both up and down the Mississippi. It forms a capital place for the study of the migration of aquatic birds. Standing on the bank on the southwest side of the island, one gets another extensive view of the valley of Skunk River. Thus Dollar Island must be said to be one which furnishes unrivaled opportunities for the ornithologist.

Bearing all these advantages in mind and associating them with the pleasant experiences of the past, what wonder that I rejoiced when at last we were on our way, on the morning of the 29th of August, to revisit the old spot where once our canvas had sheltered us from wet and cold.

The day was not all that could be expected; by the time we reached Picnic Point we were forced to seek shelter beneath the short railroad bridge from a passing shower. While waiting here we had a chance to note quite a number of birds which were paying a morning call to the little rivulet that runs its troubled way over a very short course. Several Brown Thrashers were scolding from the bordering brush in which they were joined by some Catbirds and a little



THE TUFTED TIT.

the "Father of Waters", on the other side by branches of Skunk River, which breaks up into a number of arms ere it merges with the Mississippi. The island is small, to be sure, but its diminutive size and isolation have retained for it most of its primitive forest: tall gigantic sycamores and elms, which cause one to dream of by-gone days. These patriarchs are more

later by two Baltimore Orioles, a pair of King-birds, and a House Wren who felt called upon to add his opinion on the subject.

The shower soon ended in a drizzle and this gradually gave way, and every now and then the clouds would part and the sun would extend a short loving glance to some favorite spot and kiss away the pearly drops which be-gemmed all nature.

Bank, Eave, Rough-winged and Tree Swallows were skimming over the river, and before we re-sumed our journey an Indigo mounted a tele-graph wire, and sang his out-of-date song.

Aside from a number of Crows, a few soaring Hawks and a few Great Blue Herons feeding on the bars, or lazily flopping off to some secluded pool or roost, where they might continue their fishing business or rest in peace from the toil of the past night, nothing attracted our eye, until we reached the dam. Here we noticed several Turkey Buzzards, but failed in the attempt to add one to our collection. A Green Heron was frightened from his fishing post by the murder-ous noise and sought refuge in a neighboring willow thicket.

It may seem strange, but I have never seen these birds (Buzzards) at Burlington. I have found them quite abundant at Iowa City, Cedar Rapids and Decorah, Iowa, but have never seen them on the Mississippi at Burlington. An im-mense sycamore with many a dead limb, a little distance from the bank of that branch of the Skunk River which runs into Green Bay, about one-half mile from its head, is a favorite roost-ing place of these black brethren.

We landed and found the little clearing we had made three years ago, still free of weeds and brush. The place seemed to have found favor in other eyes. At least the charred sticks and ashes from which three blackened rocks peeped forth would indicate a recent visit by man.

Pretty, busy little Red Starts were everywhere, mostly birds of the season in their youthful dress, Chickadees, not the Carolina of the south-ern states, but our strong-voiced Black Cap, were making the woods resound with their merry notes. Now and then we heard more powerful expressions—instead of dee, dee, dee, dee,—a harsh zee, zee, zee, zee and our heart gave a leap, for this was the note of the Tufted Tit, a bird whose acquaintance we had made in the cold winter of '89 at Blackhawk Spring, near Burlington, but which had ever after been absent from our lists. I noticed Tufted Tits everywhere about Burlington on this visit, in fact they were quite common. Another bird, which I had only once seen in this locality, the Hooded Warbler was found breeding on Dollar Island, —at least I obtained the male and two quite young specimens, among the dense rag-weed and tangle on the south side. Here it will be well to say that had I not been very familiar with the bird's call—(It is a very abundant species in the Great Dismal Swamp of Virginia, where I have studied it on several occasions), I would have overlooked it. But the bright sharp pleas-ing call-note, stood out against the other voices, like a rocket against a dark sky. While maneu-ering among the towering weeds and shedding,

not salty tears—but many drops of perspi-ration, saying many things to a shell which had become fixed in my auxilliary, I heard another voice which I had often heard in other clines, the Carolina Wren. I have never known this bird here before and while I heard him many and many a time that day and the next, I never was able to call him forth from his tangle again. He had responded to my squeak once, and saw a man, a dangerous man, and with a gun, he learned a lesson and kept his skin. Red-heads and Flickers, and occasionally a Red-bellied Woodpecker often announce their presence by tap or note. The Hairy and his diminutive counterpart Downy, who by the way is var. *medianus*, are also on our list, and I suppose it is well to mention the Nuthatch in this connection.

The mudflats below the east end of the dam provided favorite places for the mud-loving shore birds, and a trip over them furnished us with the following list. A noisy Lesser Yellow-leg, a small mixed flock, perhaps fifteen specimens of the Least and Semi-palmated Sandpipers among which three Pectorals moved majestically. A little farther on in the next cove, we found a small bunch of that most beautiful bird the Semi-palmated Plover, and where sand and mud join, changing the black to a whitish hue, a single specimen of the almost snowy Piping Plover swiftly pursued his prey. On the very point of the bar we noted and were noticed by several Spotted Sandpipers who took leave with the usual peet, peet, peet, peet. They were all young birds lacking the spotting of the breast, but having instead the ashy throat. We turned back through the center of the outer of the twins and soon reached the lake which runs almost through its entire length. The summer sun and low stage of the Mississippi had almost caused it to run dry. Here in this secluded shady place we found several pairs of Solitary Sandpipers which remonstrated at our intrusion with upraised voice and wings. The dense tangle of wild cucumber vines, which spans and unites everything from the very edge of the lake to the main timber, forms an admirable retreat for the Woodcock and the Maryland Yellow-throat. Blue Jays and Crows had evi-dently discovered an Owl in the timber, at least their voices proclaimed as much. We hastened to see what the cause of all this racket might be, but arrived only in time to hear that, it was "all over now."

Numerous Warblers were flitting about in the tree tops busily gleaning their evening meal. We noted among them Black-throated Green, Nashville, Parula, a Black-and-White Creeper, and many of the other species mentioned before.

We paused awhile at the head of the island to watch a large flock of Pelicans flying south, until they were lost from view. Another train composed of Black Terns also bound for the south passed by, — mostly immatures and motley. What a difference in color the various individ-uals of this species present in fall, from the young with white gray and pearl to the adult in checkered or black.

(To be Continued.)

STEPHENS' WHIP-POOR-WILL, *ANTROSTOMUS MACROMYSTAX* (WAGLER).

BY J. H. RILEY, Washington, D. C.*

The bird known as Stephens' Whip-poor-will was described by Wagler (Isis, 1831, 533) from Mexico, but owing to the poor description the bird was not recognized by later authors until Selater (P. Z. S., 1858, 296), reporting upon a collection of birds made by Sallé in the state of Oaxaca, Mexico, identified an *Antrostomus* as probably belonging to Wagler's *macromystax*, saying that "it agrees with all the characters he gives of that species." Selater again (P. Z. S., 1866, 137), in his "Notes upon the American *Caprimulgidae*," with only the same specimen reported upon in 1858, says: "Whether this bird is really Wagler's *C. macromystax* is certainly problematical, but there is no doubt at all of its being quite distinct from *A. vociferus*, although at first sight it is surprisingly like that species in colouration."

Probably from the lack of proper material from Mexico, American ornithologists, applying Wagler's name to another species until recently, Brewster (Bull. Nutt. Orn. Club, vi, 1881, 69) described a Whip-poor-will from Arizona as *Antrostomus vociferus arizonae*, under which name it was placed in the A. O. U. Check-List of 1886. Hartert (Ibis, 1892, 296), however, after an examination of the type, determined that the bird described by Brewster was the *macromystax* of Wagler, which he thought was a good subspecies of *vociferus*, and that *Antrostomus* was not sufficiently distinct from *Caprimulgus* to be recognized as a genus. Salvin and Godman in the *Biologia Centrali-Americana*, ii, 1893, 387, justly gave full specific rank to this bird. So much for the systematic history; now we will proceed to an examination of what has been written on the life history and the eggs.

Brewster, quoting a letter from F. Stephens, (Bull. Nutt. Orn. Club, 1881, 71,) says: "I heard the first Whip-poor-will about the middle of May. By June 1, they were as common as I ever knew them to be in the east. Sometimes I could hear three or four whistling at once. They were very restless and rather shy, so I got only the specimen I sent you, and a female shot in the daytime. The latter flew off her nest, which, as usual, was only a very slight depression in the ground, but in this case was overhung by a rock. The single egg (now before me) is plain white with very faint brownish spots, so faint that one would hardly notice them. She would have laid no more. This was on July 14, 1880. The people in the cañon said they were not as plenty in 1880, as they were last summer. I heard the males until August, at which time I left the Chiracahua Mountains. I have not heard the species elsewhere in Arizona."

In the *Biologia Centrali-Americana*, ii, 1893, 387, Salvin and Godman have this to say on its habits in Guatemala: "On 20th April, 1860, Mr. R. Owen found, in the Santa Barbara Mountains in Vera Paz, two eggs of this species, and secured the parent. These eggs, though of the shape and texture usual in the *Caprimulgidae*, are pure spotless white; they were deposited on

the ground at the foot of a large pine tree, but there was no nest. That these eggs belonged to the bird secured cannot be reasonably doubted; but their colour is quite unusual and perhaps abnormal, though it must be remembered *Phalacroptilus nullalli* lays white eggs, and those of *Stenopsis ruficervix* are of the same colour."

The late Major Bendire, in *Life Histories North Am. Birds*, 11, 1894, 152, quoting from notes furnished by Doctor Fisher, says: "The Whip-poor-will's note was not heard at Fort Bowie, Arizona, during the last three weeks of May, 1894. When we made camp at the mouth of Rucker Canyon, some forty miles south of the Post in the Chiracahua Mountains, on the last day of the month, we heard a few, and a couple of days later found the species abundant higher up in the same Canyon, among the pines (*P. ponderosa*). Here at early dusk and at dawn their notes were heard almost continuously and numbers of birds were seen. On June 5, Mr. Fred. Hall Fowler found a nest, if a slight depression in the ground can be so designated, on a steep hillside about 50 feet above the stream. It was situated under an overhanging bush at the edge of a flat rock, and contained two young, recently hatched, and the fragments of shells from which they had emerged." The pieces of shells are white, apparently without spots.

All the descriptions I have been able to examine agree in giving the complement at from one to two, generally the latter number, and in describing the eggs as white or with only very faint nearly imperceptible markings. Two eggs, recently acquired by Dr. W. L. Ralph and now in his magnificent collection donated to the United States National Museum, are of an elliptical oval shape and of a pure spotless white, measuring 28.5 x 20 and 28 x 20 mm, respectively. They were collected near Colonia Garcia (8,000 ft. alt.), Chihuahua, Mexico, June 6, 1899. The nest was a hollow, sparsely lined with pine needles, among rocks on the side of a cañon. One of the parent birds was secured and accompanied the eggs.

From the foregoing it will be seen that the breeding range of *macromystax* is an extensive one, extending, as it does, from the mountains of southern Arizona over the tablelands of Mexico at least to Guatemala, but apparently not occurring at very low altitudes, being evidently a mountain species.

Different systematists have been sorely perplexed whether to regard this as only a race of *vociferus* or to accord it the rank of a species. For my part, I believe with Professor Newton, that while Oology is not a science by itself, that nevertheless the study of eggs and the habits of birds have a certain indefinable value in determining the status of species and that any bird which, in a state of nature, lays eggs as distinct as do *vociferus* and *macromystax* should be accorded full specific rank. Therefore Stephens' Whip-poor-will should stand as *Antrostomus macromystax* (Wagler).

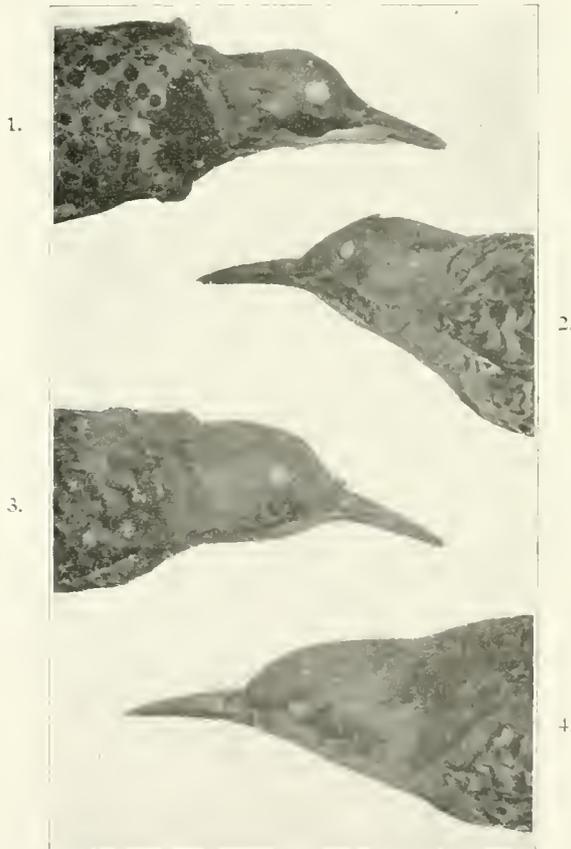
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THE MALAR STRIPE OF YOUNG FLICKERS AND THE MOLT.

By WILLIAM PALMER, Washington, D. C.

On September 16, 1894, while skinning a young molting specimen of the Flicker (*Colaptes auratus*) which from the black malar stripe I had concluded was a male, I was surprised upon dissection to find that it was a female bird. Subsequently I compared it with others in my own collection, and in the collections of Mr. J. D. Figgins and Mr. C. W. Richmond, all of which were collected in the immediate vicinity of Washington. I have also examined much of the literature on the subject, have collected and arranged the facts, and am thus enabled to trace

authority. In no instance have I been able to find or hear of a female immature bird without a black malar stripe. In a few cases, however, of both female and male birds the tips of many of the black feathers composing the stripe are similar in color to the adjacent parts, while the anterior portion is very much so, shading off rapidly into the surrounding color (Fig. 2). Little reliance can be placed in the statements of authors generally on this subject. I find every possible degree of accuracy and inaccuracy tho' the last is much the more common.



Four specimens of *Colaptes auratus* showing the gradual disappearance of the malar stripes in the female.

out the changes incident to the loss of the stripe by the female with some additional evidence in the same connection.

I shall premise by stating that the nestling Yellow-shafted Flicker always has in both sexes a black malar stripe as shown in Figure 1. This is shown by over one hundred examples which I have either seen or know of on reliable

Dr. Coues, in the *Birds of the Northwest*, p. 293, says of the malar stripe of *C. auratus*, in a footnote, "these black patches are supposed to be entirely wanting in the female. But Mr. W. D. Scott says, (*Pr. Bost. Soc.*, Oct. 1872): An immature female (sex noted by careful dissection) had a dark cheek-patch, differing only from that of the mature male in having gray

feathers mixed with the black. In an adult female the outlines of the cheek-patch can be plainly seen."

Dr. J. A. Allen, in the Bulletin of the American Museum of Natural History, Vol. iv, No. 1, has fairly stated the case, and I cannot do better than quote his words. He says, on p. 21, "there are occasionally indications of a malar stripe in the [adult] female. This, however, is very rare in *C. auratus* and *C. chrysoides*, but common in the *C. cafer* group, and the rule in *C. mexicanoides*, where the exceptions are rare. When present in the female it differs greatly from the corresponding mark in the male. In *C. auratus* a very small percentage of the females have the area occupied by the malar stripe in the male faintly tinged with grayish, the basal portions of the feathers being dusky and showing slightly at the surface. In one specimen (No. 8308, ad., Coll. Wm. Brewster), from Ann Arbor, Michigan, the feathers of the malar area are distinctly black beneath the surface, the black extending quite to the tips of the feathers, forming a well-marked incipient malar stripe. This is, however, an extreme case, and almost unique. In another specimen, also from Michigan (Ypsilanti, No. 8306, ad., Coll. Wm. Brewster), a few of the feathers of the malar region are tipped with black and many others with red, giving rise to a very narrow red malar stripe slightly mixed with black. Otherwise the bird is a normal example of *C. auratus*." On p. 44, he says: "A feature of special interest in respect to the young in nesting plumage is the variable status of the malar stripe, considered as a secondary sexual character. In *C. auratus* both sexes have the black malar stripe, which in adult birds is confined to the male. In 30 specimens, ranging in age from half-grown nestlings to full-fledged birds, not one lacks the black malar stripe, while five of these are recorded as females by their respective collectors from anatomical examination of the specimens, and attention is called on the label, to the presence of the malar stripe. While most of the other specimens are marked as males, it is quite certain that they were thus marked on the presumption that a black malar stripe denoted a male in the young as well as in the adult."

Mr. Wm. Brewster has a brief note on this subject in his very interesting paper on a brood of young Flickers, (Auk, Vol. x, 1893, p. 235). He says, "at 6 o'clock of the evening of the 9th, I looked into the nest and counted all five of the young. They seemed to be fully grown and perfectly feathered. They were colored precisely alike, as far as I could see, and all had the black moustache as extensive, deeply colored and conspicuous, as in mature males of their species." Some ten families of young that I have seen or of which I have received positive evidence agree with Mr. Brewster's statement; all had black stripes.

The use of the word 'moustache' in the above and various other accounts of these birds seems

to me to be misplaced as the black patch is below the mouth, and not as the word is ordinarily used situated on that part which corresponds to the upper lip of mammals: malar stripe would seem to be a more appropriate term.

The facts in the case, as far as I have been able to collect them, show that all immature Yellow-shafted Flickers of both sexes up to the molt of the mesoptile feathers have a black malar stripe on each side of the face, the sexes being precisely alike except that those having the most red scattered on the head and neck are usually, perhaps always, males. After the young reach full size, in the course of a few months (about Washington this is late in August or early in September), they molt all feathers, and rapidly acquire their next, the so-called 'winter'—really the first teleoptile plumage. In the course of this molt the black malar feathers of female birds are replaced by reddish-gray feathers almost precisely of the same color as the surrounding parts. This is well shown in a number of specimens that I have examined, and especially in one taken at Kensington, Maryland, September 16, 1893, (Coll. W. P., No. 3602). In this specimen (Fig. 3), which is about three-fourths changed into the teleoptile plumage, the malar stripe is about half black and half reddish-gray, the new feathers being of precisely the same coloration as the surrounding feathers, and are larger than the older mesoptile ones which they are displacing.

The molting is irregular, occurring in spots all over the malar region, but evidently more nearly complete on the anterior portion. On such a small place the change is probably rapid, thus preventing the collecting of many specimens showing the progressive change.

My series of specimens shows very well the change in these young birds on molting the mesoptile feathers.

First, the teleoptiles appear on the inter-scapulars and breast spreading rapidly downwards, and over the neck and head. Before the mesoptile feathers are two-thirds replaced, the flight feathers begin to change: some of the inner primaries alternately grow first, the growth advancing irregularly to the outer primary. Two or three pair of the outer rectrices (but not the short outermost) first obtain their full growth, the movement advancing toward the central pair which are not changed until the others are fully mature and effective for good use, the usual mode in the Woodpeckers. The malar feathers are replaced while the head and neck are changing. The last feathers to change are the less perfect feathers, the semiplumes of the rump and the underbody, the lightest colored and the least important, for the time, the coverts, tertials and secondaries. The mesoptile* plumage of these birds is much darker than the teleoptile, the black spotting of the breast being more numerous, and the dorsal barring being broader and more blotchy.† The spotting of the secondaries is much browner, and these feathers lack the terminal pale edge-

*Palmer, The Avifauna of the Pribilof Islands, p. 124 Vol. iii, The Fur Seals and Fur-Seal Islands of the North Pacific Ocean, 1899.

†The mesoptile interscapulars have one broad black bar while the teleoptile feathers from the same place have two narrower bars.

ing. The light tips of the teleoptile primaries are absent or reduced. The change in the adult birds seems to be similar, but the tertials change with the primaries, probably progressing through the secondaries.

Not enough specimens of the other forms of this genus are at hand to determine their exact course, but the subject is interesting, and should be investigated.

In the closely related Cuban bird, *Nesococcyx fernandinae*, we have plumage values very similar to the mesoptile plumage of the Flicker though the concentration of color is much less complete. The male has a perfect malar stripe, while the female has the same region together with the entire throat and under neck covered with numerous black spots on a grayish and yellowish ground. The pattern of color and markings of the birds are very similar to those of the Flicker, but are evidently more generalized. The species probably represents a type through which our *Colaptes* have progressed in fixing their specialization, the spotted throat of the female being a stage on the young toward a concentration of the black on the malar region of the North American birds, and on the throat for many South American species. Unfortunately young birds, which must be extremely interesting in this connection, are not accessible, and are probably not in collections, as the species is rather rare.

To work out these values properly we should possess a complete series of the South American *Colaptes* and correctly sexed. As far as examined they appear to possess a mesoptile-like or

generalized style of plumage with the black and yellow areas specializing in a different location than is seen in the North American species.

I am almost at a loss to account for this early disappearance of such a strongly marked feathered tract. The change by molt in such a young bird, and in one sex only of two sharply defined small black areas into a color similar to that of the surrounding area is apparently unique; at least I have not been able to learn of another.

The possession of a permanent red malar stripe by the female *C. mexicanoides* complicates the matter still further. But the question may well be asked, is the adult female *auratus* acquiring the black malar or is she losing it? Did she in some time in her past have black malar stripes during her whole life or will she at some time in the far distant future acquire this same distinction which has already been reached by the males of all the species and by the females of some. The fact that occasionally adult female Flickers have a dark or reddish malar stripe is evidence for either side of the question. I am inclined to consider that as the sum of the black areas are greater in the mesoptile plumage than in the teleoptile, we may have here a bird whose ancestors were much darker, and that the specialized tendency of the coloration is toward concentration and definiteness, and that the retaining of the malar black by the male is a purely psychological or higher character. We have, however, much to learn from the immature of the more tropical and older, or less advanced species.

BLUE GROSBEAK IN EASTERN KANSAS.

BY WALTER SCOTT COLVIN, Osawatomie, Kan.

In the past six years, up to the spring of 1901, I have observed three male Blue Grosbeaks in this, Miami County, within a few miles of the Missouri State line. This year I was more fortunate in observing four more birds, and also in securing a set of eggs.

On the morning of April 30, 1901, I heard a male Grosbeak singing in town. Its pretty song came from a Box-Elder tree which stood near a dwelling.

On the eve of May 23, 1901, I observed a pair of Blue Grosbeaks catching insects on the wing, in a cornfield, by a roadside, one mile north of town. From their actions I judged them mated, although the male was silent, and did not utter a sound. The female quite often gave vent to her notes of "chink chink." Formerly an immense Osage hedge grew, for a considerable distance, on the east side of the road at this point; but this has been cleared away exposing a heavy growth of buck bushes. It was in these clumps that I looked for a nesting site without avail.

On May 29th, I revisited the spot, and found what I took to be a nest of this species, situated eighteen inches from the ground in a crotch of a small buck bush that grew in a thick clump of the same shrub. The nest contained a single egg. No birds were observed.

On the morning of June 2, 1901, I again visited the nest, and was not only surprised; but elated to find Mrs. Blue Grosbeak at home attending to domestic affairs. Upon flushing her from the nest I found that it contained four light blue eggs, which I left until the afternoon in order to photograph them.

When I returned to the nest in the afternoon she flushed easily, and quickly disappeared. She did not return while I was in the vicinity of the nest. Upon this last trip I did not get a glimpse of the male.

The nest was composed of Corn shucks, leaves and stems, grass, pieces of sheep wool, fibrous parts of plants; lined with fine wiry rootlets, fine grasses and black and white horse hairs. The inside diameter was 2½ inches; the inside depth 2 inches; the outside depth 4 inches; and the outside diameter 1 inches.

In color and shape the eggs resemble those of the Indigo Bunting; but they are of larger size. Measuring .82 x .60, .83 x .62, .85 x .63, .85 x .63.

On June 21, I observed another male Blue Grosbeak singing in a bunch of willows some two miles south of town,

THE OSPREY OR FISH HAWK: ITS CHARACTERISTICS AND HABITS.—VI.

BY THEODORE GILL, Washington, D. C.

Continued from Vol. V, p. 93.

"They fish for the most part in the creeks and secluded inlets, hovering over the waters and suddenly capturing their victim by diving upon it. But they sometimes come over the open waters of the bays, and, when the keys are covered with trees, over the gulf, to find their food. On first acquaintance their actions seemed inexplicable. I could not account for their eccentric ways. While in the hidden places of the creeks they utter no cry, and seem to be efficient masters of the craft, but in the open they vacillate painfully. They are large, active-winged birds, never soaring, are quite strong, and weigh about six or seven pounds. On leaving the trees lining the shore, perhaps allured by a school of mullet in the channel, they seem eager for action, and all alive with expectation, but just before stooping on the fish would set up a frightened, discordant scream, and make for the shore with a haste so ill-advised as seriously to impede progress. Before the trees were reached, confidence would be restored, and running, the same singular performance would be repeated, perhaps for three or four times before the game was finally secured. No enemy was in sight. The breeze would flow gently. All was serene, yet terror would take possession of the bird and almost paralyze its efforts by making it frantic." He "soon learned the reason for this cowardice." He saw a "hawk cross overhead and proceed seaward to find a dinner. The excursion was successful as the pass swarmed with fish coming in with the tide. A fine one soon left its element and swung aloft into the air in the talons of the bird, which at once began its return. But a new-comer appeared upon the scene. A black creature which seemed all wings and shaped like a flattened letter M, dropped from above and confronted the Hawk, which at once dropped its prey and screamed so brimful of mortal terror that it should have excited the sympathy of all living things within the compass of its sound. It was not disturbed by actual contact. The two birds were not within fifty feet of each other, but the Hawk exerted itself with the same wild energy to get to cover which I had before so often witnessed when no black monster was in the vicinage. The intruder was a Frigate-bird, and upon looking upwards a score of them could be seen a mile or more from the earth, floating round and round, on motionless wings. The dropped fish was seized in the beak of the bird long before it reached the water."

Again, returning to the locality after an absence of some weeks, he "found the black outlines of the Frigate-birds against the sky as usual, and soon saw the inevitable Hawk over the waters of the pass all excitement at the prospect of a dinner. It was the beginning of March, and in that month the sea-breezes of the vicinity are particularly delightful. It is also the breeding season of the birds when their plumage is at its best, and they show to best

advantage. Success always followed any well directed effort of a bird to catch a fish in Boca Grande pass, and the Hawk soon had one. A black corsair at once appeared and captured the booty as on the former occasion, while the frightened fisher fled screaming towards the land. But now a change of programme took place. Another long-winged creature from the group above appeared in front of and facing the frightened Hawk which turned seaward at once, mingling its note of terror with one of despair. Every effort to side off towards home was frustrated by the gliding terror interposing its bulk in the intended direction, until the victim seemed to accept the inevitable and made an attempt to cross the gulf. The tormenting enemy then seemed content, and swung aloft among its companions. The poor fisherman, rid of the dire presence, wheeled on its course for home, and its frenzied flappings relieved of excessive tension, made very good time, when on reaching the very brink of safety the black wings again appeared and the whole distressing business was re-enacted with increasing despair in the frightened cry. This went on for more than half an hour. Every effort at retreat was intercepted. During all the time the Hawk kept up an incessant flapping of its wings, and its physical endurance was giving way under the protracted strain. This was apparent from the changing tone of its scream, which varied through all the gamut of despair, from unreasoning terror, to supplicating misery."

"The Frigate-bird at length seemed impatient. It more promptly answered the movements of the Hawk, and urged compliance with greater vigor, and finally introduced a new feature into the proceedings. Swooping upwards for one hundred feet it turned head foremost, and plunged beneath the Hawk, turning completely over as it did so, and passing to the front vaulted upwards, and down again in the same path, thus describing an elliptical orbit around its victim. It swung near the Hawk round the lower curve, causing upward flight, until at length in an exhausted condition it was introduced into the company of its tormentors which had been descending from high levels and were now about four hundred yards above the water. Its strength was now well nigh exhausted. Its cry was scarcely audible, and it barely had the power of directing its movements. In whichever way it went, excepting one, a black terror confronted it. It could rise unimpeded, but found resistance to every other course. It struggled upwards for some four hundred yards further, until the distance was so great as to make it difficult to keep the movements in the field of the glass, when it gave up the task, and rapidly floundered over and over through the air, its muscular power exhausted, and its mass surrendered to the gravitating force. Down it came, the whole half-score of enemies circling about it, until it struck the water near the beach

in the shallows of the offing. The tide was running out and the water on the flat not over a foot in depth."

Supposing the play to be out, Mr. Lancaster "was proceeding to examine the victim when it was evident that more was to come. The Hawk was not dead and would at intervals raise its head from beneath the water to breathe. It had not strength to submerge its body, and with the vital air came a vision of the hovering terror. Down went its head with a gurgling murmur, and those black demons would alight upon it with their miserable puny feet and punch it entirely beneath the surface.

"The vitality of the Fish-hawk is something wonderful, for this pastime went on for an hour, until at length it was completely dead."

Such treatment of the Osprey by the Frigate-bird must be exceptional and was not observed by Audubon whose experience in Florida was considerable. Nevertheless, there is no *a priori* reason for discrediting the occurrence of the episode described by Mr. Lancaster. The Frigate-bird is well known to compel other birds to get for it or at least disgorge their food. Audubon found that "the Cayenne Tern and other species of that genus, as well as several small Gulls, all abundant on the Florida coast, are its purveyors, and them it forces to disgorge or drop their prey."

Such tyrants are unknown to the Osprey in Europe and have been observed only by American naturalists. Naumann mentions only Crows.

THE OSPREY AS A HOST.

Not only is the Osprey sociable with its fellows; it is also tolerant of the company of other birds of different species and habits. The Purple Grackle is a frequent applicant for hospitality and takes advantage of interspaces around the Osprey's nest to establish one of its own. Other nesting parasites have been observed, as Crows, Sparrows, Wrens, and even Herons. Sometimes several species shelter in one and the same nest, as has been recorded by Mr. Allen.

A pair of Fish-hawks on Plum Island occupied a nest situated on the bank of a very sluggish stream at the edge of the piece of wood. "The nest was old and large, and was probably an inheritance from former generations. It was thoroughly protected from below by the long projecting sticks at the base and the imperviousness of the mass. A pair of Herons, wiser than their kin, built their nest under the Fish-hawk's nest, only some fifteen inches below it, and in a place the Fish-hawk could not possibly reach without tearing away a portion of their own nest. The Heron's nest was thus

thoroughly protected from storms and from hostile attack from above. In the crevices of this same Fish-hawk's nest were five nests of the Purple Grackle, one Wren's nest, and an English Sparrow's nest."

FOLK LORE AND POPULAR BELIEFS.

Common and conspicuous as it is, naturally around the Osprey various beliefs and superstitions have grown up.

In some parts of the United States the Osprey is regarded with special favor for one reason or other.

By its flight, the weatherwise shore-man and rustic pretend to forecast an impending storm, or, as Wilson in sympathetic language expresses it, "they serve as a barometer to foretell the changes of the atmosphere; for, when the Fish-hawks are seen thus sailing high in air, in circles, it is universally believed to prognosticate a change of weather, often a thunder storm, in a few hours. On the faith of the certainty of these signs, the experienced coaster wisely prepares for the expected storm, and is rarely mistaken."

In the words of Dr. S. L. Mitchill, (communicated to Wilson,) "a sort of superstition is entertained in regard to the Fish-hawk. It has been considered a fortunate incident to have a nest, and a pair of these birds, on one's farm. They have therefore been generally respected, and neither the axe nor the gun has been lifted against them." We are also told by Mr. Howe (Auk, xii, 301) that "the Ospreys in Bristol, [R. I.] have been so carefully watched—as the belief among the farmers is that they protect their poultry from other marauding hawks*—that they have become very tame and only when the eggs are nearly hatched or when the young are in the nest do they pay any heed to the passer by."

Audubon had long before referred to the same belief. He considered that "a most erroneous idea prevails among our fishermen, and the farmers along our coast, that the Fish-hawk's nest is the best *Scare-crow* they can have in the vicinity of their houses or grounds." This belief, Audubon suggested, has as its only foundation a certain coincidence. "The absence of most birds of prey from those parts at the time the Fish-hawk is on our coasts arises simply from the necessity or retiring to the more sequestered parts of the interior for the purpose of rearing their young in security" and their reappearance coincides with the appearance of the winter shore and sea birds.

In England, in olden times, some strange ideas were entertained about the Osprey.

(To be Continued.)

*See also Dr. Fisher (Hawks and Owls.)

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Comments.

THE POPULARITY OF WHITE'S SELBORNE.

Not less than three editions of Gilbert White's "Natural History and Antiquities of Selborne" have been published within the past year and over a hundred editions have been passed through the various presses of Britain and America since its first appearance little more than a century ago. The first edition was issued in 1788, and the work has increased in popularity and circulation to the present time. The recent editions range from a cheap small single volume sold for a shilling and sixpence by J. M. Dent & Co., to the luxurious one in two volumes edited by the famous ornithologist, Dr. R. Bowdler Sharpe, and published by S. T. Freeman at the price of three pounds sterling.

What is the reason for the continued esteem which a work on Natural History published so long ago still evokes? White, it is to be remembered, was a contemporary of Linnaeus and pursued his studies so early that he followed the nomenclature of Ray rather than that of Linnaeus. His correspondence with Pennant com-

menced in 1768, and that with Barrington in 1769, and dragged through the period of our Revolutionary War. The works of his contemporaries have long since been left untouched on the shelves of libraries or are only referred to by experts in order to settle some mooted point of nomenclature. Probably if Pennant had been told that the letters of his deferential correspondent would be read with increasing interest while his own great works would exist only in the memory of bibliophiles and repose untouched on dusty shelves, he would have smiled in derision. White was a man of sense, and he himself had no dream of lasting fame. His letters were not sent to the press until many years after most of them were written, and he expressed his own want of confidence in their reception by the public in lines penned when the collection had been for some time issued.

The cause of popularity is not splendor of style such as appealed to the sentiment of the French in the case of White's distinguished contemporary, Buffon, for the letters of the English clergyman are rather characterized by simplicity of style. That very simplicity, in fact, is one of the attractive features in White's work. The manner is as natural as might be manifest in the correspondence of intimate friends; it does not divert attention from the subject matter. But certain requisites are necessary for one to appreciate and enjoy White's book. First, there must be an innate love of nature. Next, the reader must have a considerable acquaintance with country life and have a store of pleasing reminiscences of rural scenes which are revived or suggested by the perusal of the work. Finally, to fully enjoy it, he must have imagination which can vivify the episodes and circumstances told of in the letters. With these qualifications, one can scarcely fail to become interested in the work for its own sake. But another element has come into play to ensure the printing of so many editions; it is the tendency to adopt a "fad." White has become a fashionable author; he has been placed among the first hundred or fifty writers who must be represented in everyone's library at the risk of the defaulter being denied taste or knowledge. Passion for collecting many editions has become developed; therefore are many editions published. Doubtless many more will be published as time rolls on although it is not easy to see what want remains unfilled, unless it may be an edition especially adapted for the use of Americans.

Letters.

DR. GILL IN GLASGOW.

GLASGOW, *June 15, 1901.*

As you may remember, I sailed from New York on the 1st of the month (June) and had a most pleasant voyage across the Atlantic with a fine state room to myself and very pleasant table companions. After a voyage of little more than eight days, we arrived at Greenock about 8 o'clock on Sunday evening and took the cars for Glasgow which we reached about 9 o'clock while it was broad daylight. We had scarcely come within sight of Ireland when numerous Gulls approached the vessel and more or less accompanied us all the way to our port of landing. Most of them were evidently the black-headed *Larus ridibundus*, but others apparently were of the larger *Larus glaucus*. A notable feature in fact, is the abundance of these Gulls, not only along the coast but in the heart of the city. Flocks of them were visible on the Tweed in the thickly settled part of the city, and individuals are to be seen flying over the streets of the city at some distance from the water. They accompany the vessels for the offal and "cold victuals" thrown overboard and which they have learned to look for. It is amusing to see them swoop downward after the rejecta thrown overboard and expected success or fear of competition is expressed by a subdued cry. The dexterity exhibited in catching at a dainty morsel is surprising. At times, they would descend on the water and ride easily on the waves and again would resume their flight when excited by some movement of their companions or expectant of a fresh supply of food. More or less of the Gulls accompanied us for eight or ten hours and till we reached our dock. They were accompanied by black-head terns.

There is a considerable museum attached to the University of Glasgow called the "Hunterian Museum," the basis being a collection made by the eminent William Hunter, M. D., brother of the still better known John Hunter whose own collection is the basis of that of the Royal College of Surgeons of London. I mention this because I found that the two individuals were sometimes confounded. William Hunter was the elder and was born in 1718. The collection was a general one, including not only natural objects, but books, paintings, coins, etc. This was bequeathed by will in 1783 to the college and its present keeper is professor of "Natural History" in the University. The birds are numerous and preserved in the old fashioned way, mounted on stands, and closely crowded together. The nomenclature, too is not on a uniform plan. It is evident that there is no up-to-date ornithologist in charge or practically interested in the subject.

I will leave to-morrow for a trip to Northern Scotland, my immediate destination being Oban at the western end of the Caledonian canal which traverses Scotland from west to east.

Yours very truly,

THEO. GILL.

WEIGHT OF THE HARPY EAGLE.

WASHINGTON, D. C., *May 3, 1901.*

EDITORS OF THE OSPREY:

DEAR SIRS:

Some time ago Doctor Gill expressed a desire to know the weight of the Harpy Eagle in the National Zoological Park. It was not convenient at that time to weigh the bird; but, recently, in transferring it from one cage to another, there was good opportunity to ascertain its weight, which proves to be exactly nineteen (19) pounds.

The Harpy has been in the collection of the Park about two years, and was presented by the Governor of the State of Amazonas, Brazil, through Commander C. C. Todd, of the U. S. S. Wilmington, during the voyage of that vessel up the Amazon River. The bird has remained in perfect health, and is now in fine condition.

Very truly yours,

FRANK BAKER,
Superintendent,
National Zoological Park.

AN ONSLAUGHT OF THRASHERS ON A SNAKE.

OSAWATOMIE, KANS., *May 19, 1901.*

EDITORS OF THE OSPREY:

This afternoon while strolling in Oak Grove Cemetery with my wife, my attention was called to a Brown Thrasher fighting something in the grass along a pathway. Upon going up to the spot I almost stepped upon a Blue-racer. Walking back 25 feet or more where I could watch the spot, the Brown Thrasher flew down from an oak where it had flown when I approached it. Its antics soon brought a female Thrasher to the scene. With feathers ruffled, wings extended upward like unto the position of a Sandpiper's wings just after it alights, and their tails spread out fantail, they would thus approach the snake and strike at it with their bills. If the snake would dart at them they would only move aside. They uttered no outcry while fighting the Racer. I killed the snake and found it to be 2½ feet long. In a nearby cedar I found the nest, with four young, of the birds.

WALTER SCOTT COLVIN.



Notes.

BROWN'S ILLUSTRATIONS OF THE AMERICAN ORNITHOLOGY OF WILSON AND BONAPARTE.

In the second number of the present volume of THE OSPREY (p. 31) we partly answered a correspondent's question respecting Brown's reproduction of the plates of Wilson and Bonaparte's American Ornithology. We are now enabled to give more specific information. Doctor Gill, while in London, examined the copy of the work in the Library of the Zoological Society and, with the assistance of Mr. Waterhouse, the librarian, compared some of the illustrations with the originals of Wilson. The title of the work is correctly given, so far as it goes, in the Catalogue of the Library and thus disagrees with those recorded in Agassiz and Strickland's Bibliography and Engelmann's Bibliotheca; in full, it is as follows:—

"Illustrations of the American Ornithology of Alexander Wilson and Charles Lucien Bonaparte, Prince of Musignano. With the addition of numerous recently discovered species and representations of the whole *Sylva* of North America. By Captain Thomas Brown, [etc., etc.]. Edinburgh, Frazer & Co., 54 North Bridge. William Curry Jun'r & Co., Dublin & Smith, Elder & Co., 65 Cornhill | London, | MDCCCXXXV. [fol., eng. tit. [= 11.] + ded. eng. [= 11.] + syst. index [= 11.], 124 pl.]

The figures of birds are reproduced from Wilson's and Bonaparte's works on the 124 plates with tolerable closeness to the originals, but sometimes with the figures at different angles, and with the coloration not exact. The collocation of the species is original, and the grouping is mainly by genera adopted from Temminck. The birds are arranged on figures of branches of trees copied from Michaux.

In the words of the compiler, "The arrangement adopted is that of Temminck slightly altered, with the addition of some new Genera. One hundred and sixty-one birds have been added by the Editor, which are distinguished by an *; and eighty-seven birds have been considerably enlarged; these latter are marked by a † prefixed. Besides the addition of one hundred and sixty-seven representations of Forest Trees and Shrubs."

There is no explanatory text except the data here reproduced and the names of the birds and trees.

NICOBAR PIGEON IN VIRGINIA. Early in July, Mr. D. A. Barnes, of Petersburg, Virginia, found a strange bird in the mountains between Bedford and Bluefields, on the New River Division of the N. W. R. R. He sent the bird alive to the National Museum for identification. It proved to be a Nicobar Pigeon and was probably brought to this country by some soldier returning from the Philippines. Although found running about in a state of freedom in the woods, it is without doubt an escaped cage bird, and has no more right to figure in a list of

North American birds than has Gray's Tanager or the Troupial.

The bird is now alive and well at the National Zoological Park.—C. W. R.

SWAINSON'S HAWK IN EASTERN KANSAS.

It may be of interest to Kansas Ornithologists to know, that on April 23, 1901 while on an extensive collecting trip in Linn County, I found a pair of Swainson's Hawks constructing a nest in an elm that grew on the west bank of Sugar Creek, 28 miles from the Missouri State line. Latitude 37°, longitude 95°. Owing to limited amount of time I was unable to stay and watch developments.—WALTER STOTT COLVIN.

LIFE HISTORIES OF NORTH AMERICAN BIRDS, of which two volumes by the late Major Charles Bendire were published in 1892 and 1895, will be continued by Major Bendire's successor in the U. S. National Museum, Dr. W. L. Ralph. The continuation will be on the same lines as the volumes already published. It may be recalled that the first of these was devoted to the Gallinaceous and Raptorial birds, and the second to the series "from the Parrots to the Grackles" or Icteridae.

BLUE JAY ON A SPREE. "Naw, sir, I run him down. He's drunk on mad-berries. I didn't shoot him." So said our little stable boy, John Henry. We examined the beautiful Blue Jay. It was lying in the boy's hand, with a sort of cotented expression on its face. Its saucy eyes were elate and fearless. Its head wagged ridiculously in the effort to hold it up. It was simply drunk, nothing less. The bird was intoxicated on the berries of the "Pride of China", known throughout the south as the poison or mad-berry.

In Floridy thousands of respectable northern Robins that would blush to do it at home, are found lying about in a state of grossest drunkenness from the same cause. We wondered if some white ribbon society might not be profitably started among these poor birds. But they do not know any better. We have this advantage over them we know the mad-berry when we see it. It is to our disgrace if we do not let it alone.—*The Plymouth Review*.

VANISHING BIRD RACES. The Flamingo and the Pink Curlew are no more, the Paroquet and Egret are going fast, the White Pelican is a tradition only, like the Dodo. Some birds increase under the protection of man because he wages war on more destructive enemies. The Quail sets at naught the breach-loader and the trap if allowed to forage in the green-fields, but there are others that vanish before the face of man as does the mist before the morning sun. We may delay the end, perhaps, but it is at last the survival of the fit.—*Florida Times-Union*,

Literature.

DWIGHT ON THE SEQUENCE OF PLUMAGES AND MOULTS OF THE PASSERINE BIRDS OF NEW YORK.†—In this paper of over 270 pages, Dr. Dwight has produced a notable work, far more important for the science of ornithology than all the systematic work of a year past. It deals with many of the problems of feather change in a fairly satisfactory way, and presents a detailed study of the sequence of feather change of all the passerine birds found about New York. Seven photographic enlargements of various structural features of feathers add greatly to its value. Preliminary sections treat of the Fundamental Principles, Determination of Age by Osteological Characters, Wear or Feather Disintegration, Protective Sequence in Feather Loss, Advance of Molt in the Feather Tracts, Early Plumages and Moults of Young Birds, Sequences of Plumages and Moults, Color Facts vs. Color Theories, Outdoor Study of Molt, Migration of Young in Autumn, Classification of Molt, and the bulk of the paper, Description of Species and their Moults. A copious bibliography of the general subject completes a masterly paper. Dr. Dwight's work has been so favorably received in the "*Auk*" for January 1901, by Mr. Witmer Stone whose few criticisms have been commented on by the author in the April "*Auk*" that it is unnecessary here to follow in the same strain.

The present reviewer having trodden independently for many years past along many of the paths pictured by the author will endeavour to point out in no captious spirit, a number of instances where Dr. Dwight's rulings seem somewhat unhappy. The three very distinct comparative plumages of birds, the Neosoptile, Mesoptile and Teleoptile are not mentioned, but instead we find 1, Natal; 2, Juvenal; 3, First Winter; 4, First Nuptual; 5, Second or Adult Winter; 6, Second or Adult Nuptual. The corresponding moults are 1, Postnatal; 2, Postjuvenal; 3, First Prenuptual; 4, First Postnuptual; 5, Second or Adult Prenuptual; 6, Second or Adult Postnuptual. These somewhat cumbersome terms have already produced misunderstandings and seem in practice to be unwieldy, and even when comparatively used unscientific. Thus the juvenal (mesoptile) plumage of the Hooded Warbler, to use for instance an extreme case, produced and worn for but for a few days is comparative with the mesoptile plumage of the cormorant which is at once the juvenal, first winter, spring, and second summer plumage. Therefore, the Postjuvenal moult of the warbler occurs in the month in which it was hatched, while in the cormorant the similar fact occurs twelve months after hatching. The First Nuptual plumage of a given bird means one thing definitely, while the corresponding dress of another species may mean something quite different. Again, the Prenuptual moult in a certain species means one definite thing, while in another it occurs at an entirely different time or may be absent: in part of one species it may

occur in August, in another in our spring, and yet, in another while the bird is breeding.

In species wintering in the summer of South America it would seem incongruous there to say that such a bird is in its first "winter" plumage when the time is summer, and the birds experience nothing of a winter. Terms should be cosmopolitan. The "winter" plumage of the Scarlet Tanager, for instance, is a fiction, a nonbreeding plumage is meant. Our author evidently feels some doubt as to the sufficiency of his terms for he tells us on page 104, "Wear with its abrasion and fading often takes the place wholly or in part of a prenuptual moult, modifying in marked degree either the first winter or the adult winter dress. Consequently the plumage to which I would restrict the name nuptual may be acquired by moult, by wear or by both, and it is not the true breeding plumage," etc. Of course the word plumage in this extract and in much of the paper really means plumage condition, quite a different thing. Our author truly says, "The breeding plumage, then, on which descriptions of species are based does not, in very many cases, represent the highest plumage of the species; it may be a mixture of several and all of them badly worn." It is evident then that the word plumage has a double meaning and that our systematists have many sins to answer for. The subject is a very difficult and complex one, and needs treatment from many points of view before the true solution is evolved.

In the formative stage of a nomenclature of feather terms it is perhaps necessary to use makeshifts, and for our author's purpose in comparing chronological feather conditions of the different species it is very useful, but the importance of the subject demands a better classification.

The term "Natal down," or natal plumage is unfortunate. The conditions at hatching and even for some time after are, comparatively, so different in different groups of birds as to render such terms misplaced when speaking of some birds. It is unfortunate that our author did not use terms to fit similar comparative conditions of all birds.

In his treatment of the species Dr. Dwight is very satisfactory each sequence of plumage condition being treated independently. It is unfortunate, however, that so many "Natal downs" are recorded as "no specimen seen" for many of these could have been obtained.

Without specimens or notes at hand, packed preliminary to a long journey, it has not been possible to verify all of Dr. Dwight's conclusions, but the following occur to mind. In the Maryland Yellow-throat a complete molt of the mesoptiles occurs in the late summer, and this is probably true also of the Vireos tho' the Doctor states the contrary. The numerous crows with molting flight feathers seen in spring and early summer show the last change on the previous summers birds, in fact, it seems probable

†Annals N. Y. Acad. Sci. Vol. XIII, Oct. 31, 1900.

that in time it will be found that it is the rule for many species to change completely during their first year, the exceptions being the important facts requiring careful study.

Few will be able to estimate the enormous extent of Dr. Dwight's labors in examining and comparing many thousand specimens, and in comparing and collating the gathered facts. A thorough examination of the results established by this examination of plumage conditions and many more which might be added bid fair to give us a broad basis on which to build concepts of bird life as yet undreamed of by systematic ornithologists.—W. P.

BIRD WATCHING. By Edmund Selous. London: J. M. Dent & Co., Aldine House, 29 & 30 Bedford Street, W. C. 1901. [Svo. xi + 347 pp., 5 pl. \$3.00.]

Mr. Edmund Selous is known as one who watched and recorded the results of watching the Goatsucker or Night Jar in England a couple of years ago. He published these results (in 1899) in the form of "An Observational Diary of the habits of Night Jars (*Caprimulgus Europæus*)." Consequently we might have said that in his Bird Watching he has made some valuable "observations;" but we learn from the preface to his new book that the word "has a terrific sound," and therefore, we forbear. The preface of "Bird Watching" is characteristic and as it is not only amusing, but explains the scope of the volume well, and gives an insight into the mode of treatment, we reproduce a considerable portion of it.

"I should like to explain that this work, being, with one or two insignificant exceptions, a record of my own observations only, it has not been my intention to make general statements in regard to the habits of any particular bird. In practice, however, it is often difficult to write as if one were not doing this, without its having a very clumsy effect. One cannot for instance always say, "I have seen birds fly." One has to say, upon occasions, "Birds fly." Moreover, it is obvious that in much of the more important business of bird-life, one would be fully justified in arguing from the particular to the general; perhaps (though this is not my opinion) one would always be. But, whether this is the case or not, I wish it to be understood that, throughout, a remark that any bird acts in such or such a way means, merely, that I have, on one or more occasions, seen it do so. Also, all that I have seen which is included in this volume was noted down by me either just after it had taken place or whilst it actually was taking place; the quotations (except when literary or otherwise explicitly stated) being always from my own notes so made. For this reason I call my work "Bird Watching," and I hope the title will explain, and even justify, a good deal which in itself is certainly a want and a failing. One cannot, unfortunately, watch all birds, and of those that one can it is difficult not to say at once too little and too much: too little, because one may have only had the luck to see well a single point in the round of activities of any species—one feather in its plumage, so to speak

—and too much, because even to speak of this adequately is to fill many pages and deny space to some other bird. All I can do is to speak of some few birds as I have watched them in some few things. Those who read this preface will, I hope, expect nothing more, and I hope that not much more is implied in the title which I have chosen. Perhaps I might have been more explicit, but English is not German. "Of-some-few-birds-the-occasional-in-some-things-watching" does not seem to go well as a compound, and "Observations on," etc., sounds as formidable as "Beobachtungen über." It matters not how one may limit it, the word "Observations" has a terrific sound. Let a man say merely that he watched a robin (for instance) doing something, and no one will shrink from him; but if he talks about his "Observations on the Robin-Redbreast" then, let these have been ever so restricted, and even though he may forbear to call the bird by its Latin name, he must expect to pay the penalty. The very limitations will have something severe smacking of precise scientific distinction about them, and the implied preference for English in such a case will appear affected and to be a clumsy attempt, merely, to make himself popular. Therefore, I will not call my book "Observations on," etc. I have *watched* birds only, I have not *observed* them. It is true that, in the text itself, I do not shrink from the latter word, either as substantive or verb, or even from the Latin name of a bird, here and there, when I happen to know it (for is there not such a thing as childish pride?). But that is different. I do not begin at once in that way, and by the time I get to it anyone will have found me out, and know that I am really quite harmless. Besides, I have now set matters in their right light. But I was not going to handicap myself upon my very cover and trust to its contents, merely, for getting over it. That would have been over-confidence."

The birds "watched" and whose habits are commented upon are all English and include a number of waders (plovers, redshanks, peewits, etc., etc.), wild pigeons, gulls, skuas, ducks and other web-footed birds, rooks and some common English song birds (nightingale, etc.) The chapters (twelve in number) are full of information redolent of the fields and woods and written in an entertaining though peculiar style. The illustrations are realistic and add much to the interest of the volume. There are 5 full plates and 9 cuts interspersed in the text. We may reproduce one or two of the chapters on forms found in the United States as well as England in a future number of THE OSPREY.

On the whole, Mr. Selous' treatment of his subject is scientific, and his conclusions are logical, but we must except from this commendation a couple of his ideas at least; one is that the movements of birds in a flock is the result of thought-transference; the other, that the fluttering or simulation by a parent bird of injury is of the nature of epilepsy. There is no sufficient basis for such postulates in physiology or psychology. But such observations are inconsiderable blotches in a work with many admirable features.

EVERYDAY BIRDS. Elementary studies by Bradford Torrey; with twelve illustrations in color after Audubon and two from photographs. Boston and New York. Houghton, Mifflin & Co. 1891. [Square 12 mo. pp. 1-106. Price \$1.00.]

In "Everyday Birds" Mr. Torrey describes and treats in a simple and interesting manner a number of the most common and more conspicuous forms of Eastern North America. The little volume is divided into twenty-one chapters as follows:

1. "Two Kings." The Ruby Crown and Gold Crest.
2. "The Chickadee."
3. "The Brown Creeper."
4. "The Brown Thrasher."
5. "The Butcher Bird."
6. "The Scarlet Tanager."
7. "The Song Sparrow."
8. "The Field Sparrow and the Chipper."
9. "Some April Sparrows." A general discussion of the family followed by notes on the Purple Finch, Fox, Song, Tree, Vesper, Field and White-throated Sparrows.
10. "The Rose-breasted Grosbeak."
11. "The Blue Jay."
12. "The Kingbird."
13. "The Humming Bird."
14. "The Chimney Swift."
15. "Nighthawk and Whip-poor-will."
16. "The Flicker."
17. "The Bittern."
18. "Birds for everybody." A chapter on feeding birds in winter. A chapter on spring migration. A chapter on fall migration.
19. "Winter Pensioners."
20. "Watching the Procession."
21. "Southward Bound".

The twelve plates are reproduced from Audubon by the three-plate color-photoprocess. They represent the Blue Jay, Golden-crowned Kinglet, Chickadee, Brown Creeper, Brown Thrasher, Scarlet Tanager, Song Sparrow, Rose-breasted Grosbeak, Ruby-throated Humming Bird, Nighthawk, Whip-poor-will, and the Flicker. The two half-tones are of the Downy Woodpecker and the Chickadee.

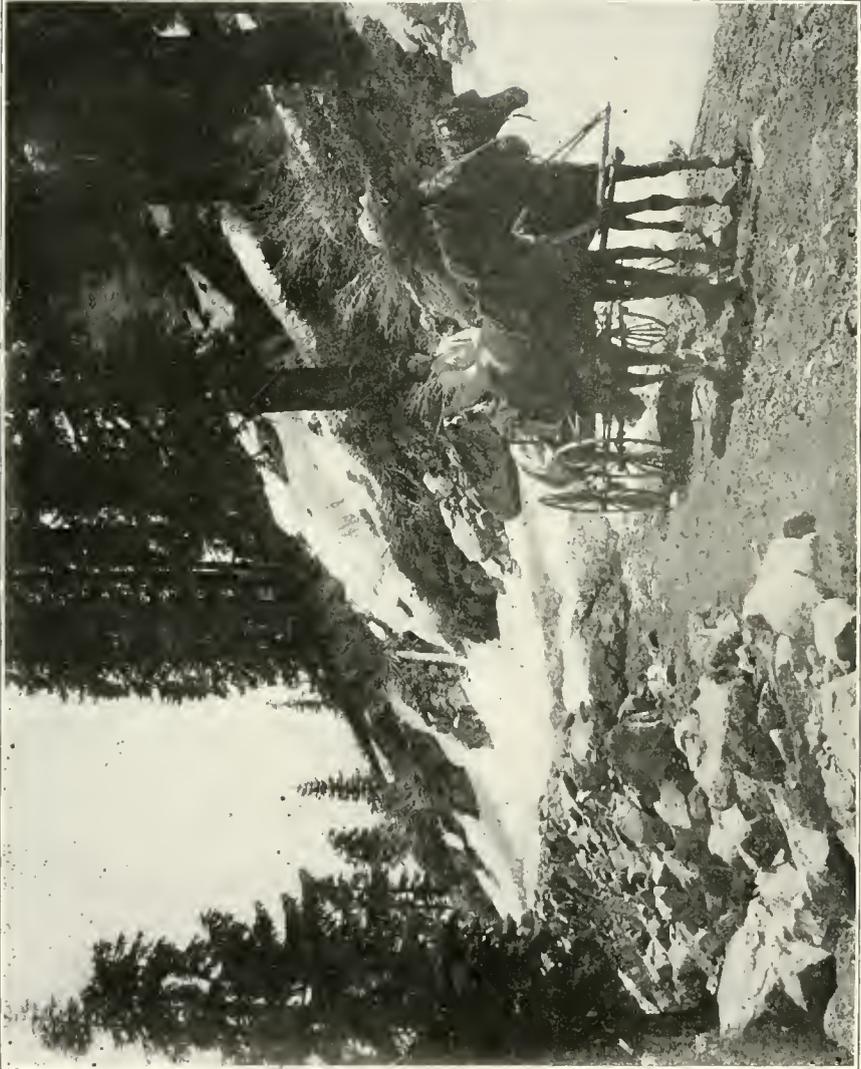
NORTON ON LABRADOR BIRDS.* Mr. Arthur H. Norton here treats of 32 species collected in Southern Labrador during the summer of 1891. The Mourning Dove, *Zenaidura macroura* and the Prairie Horned Lark, *Otocoris alpestris praticola*, both probably strays, are added to the list of Labrador birds. A specimen of *Nettion crecca* is also reported. The status of the Puffins and of the Spruce Grouse have been critically examined. As one result Mr. Norton suggests that the oldest tenable name for the American Puffin is *Mormon glacialis* of Temminck. This would make our bird *Fratercula arctica glacialis* Temminck. Incidentally in a footnote to page 144 Naumann's *Mormon glacialis* is renamed *Fratercula arctica naumanni*.

As a result of study and discussion of the literature of the Spruce Grouse, Mr. Norton reverses Mr. Bangs' recent treatment of these birds, and sums up as follows: "Therefore, the name *Canachites canadensis* Linn. must be restricted to the Spruce Grouse of Labrador and Hudson's Bay, while *Canachites canadensis canace* (Linn.) must be brought forward for the form inhabiting portions of Canada, the Northern United States and New Brunswick."

A diagrammatic plate of the bill of Puffins completes a very good paper.—W. P.

*Birds of the Bowdoin College Expedition to Labrador in 1891 > Proc. Portland Soc. N. H., Vol. ii, May 20, 1901, 139, 158.





COMING OVER THE SUMMIT NEAR BLOU. THE WRITER ON THE SEAT.

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Original and Selected Articles.

BIRDS ABOUT LAKE TAHOE.

By MILTON S. RAY, San Francisco, Cal.

In all California I know of no place where the ornithologist can spend a more enjoyable time than on the southern shore of Lake Tahoe at an altitude of 6,220 feet. Here is an abundant and varied bird-life, a cold and bracing climate, and an absence of thick brush which make long trips tiresome.

The weather, however, is liable to play strange pranks at any time. We experienced magnificent thunder storms followed by a downpour of rain and occasionally hail and light snow, and a few hours later the sun would be shining, and the sky clear. In the morning at times in June the thermometer dropped as low as 20°.

If one has continuity large he may spend his time locating nests of the warblers in the great pines or as a change a more remunerative visit to the marsh where the commoner eggs can be taken in an almost unlimited quantity. From the southern end of the lake a fertile table land extends almost 15 miles south and about 10 miles across, high mountains rising on all sides, Tallac on the west to 9,715 feet, further back snowy Pyramid attains 10,052 feet, while on the east Job's and Freel's peaks have an altitude of 10,637 and 10,849 feet respectively. The Lake Valley as it is called is thickly wooded with principally a second growth of pine and tamarack while on the mountain sides in addition are immense forests of fir, spruce and cedar.

We left San Francisco on May 28th, (1901), passing through Fyffe, rather famous for its ornithological discoveries, on the way. The rise of this road from Sacramento is very gradual, 7,500 feet being reached without any summits of consequence. We arrived at Bijou on the lake on June 4th, and erected our camp in a grove of young tamaracks at the edge of a large meadow.

I think a locality thoroughly examined will yield considerably more than a much larger area hurriedly gone over. By stealing silently along and by sitting perfectly still until the birds became unaware of my presence, I found nests which would have otherwise escaped my notice. My first find of importance was a nest of Thurber's Junco (*Junco hyemalis thurberi*) just blow-

able on June 7th. The nest was completely hidden by the wide drooping leaves of a wild sunflower, and was situated on the bank of a ditch two miles over the state line in Nevada. Scarcely 50 yards from camp on June 10th, my brother stumbled on a nest of the White-crowned Sparrow (*Zonotrichia leucophrys*) well concealed among the grass at the foot of a small willow. We had passed this spot a number of times, but the parent had been so alert as to steal away unnoticed. The eggs, four in number, were fresh and of the finely speckled type. These birds were rather scarce here, although abundant coming over the summit, and extremely common at Burk's Ranch in Plumas County. I have heard the male singing as late as 9 o'clock at night, and at the first signs of daybreak. The song is similar to that of *Z. l. nuttalli*, but the ending is more abrupt.

On the following day near camp I collected five fresh eggs of the Louisiana Tanager (*Piranga ludoviciana*). This nest was placed on a tamarack branch, only 25 feet from the ground, while one found at Fyffe on June 2nd, was 50 feet up in a pine. A very common bird was Cassin's Purple Finch (*Carpodacus cassinii*), especially among the pines where the nests, usually placed on the ends of the branches from 50 to 100 feet up, were almost impossible to reach. Nighthawks (*Chordeiles californicus leucis?*) were very numerous about the marsh, flying over the main land in large flocks on cloudy days. Strange to say their cry greatly resembles the name of the town here "Bijou." Equally abundant were the usual varieties of mountain birds, Woodpeckers, Flycatchers, Warblers, etc., and I was also somewhat surprised to see such birds as the Mourning Dove, (*Zenaidura macroura*), Belted Kingfisher (*Ceryle alcyon*), Song Sparrow (*Melospiza fasciata?*), Cliff Swallow (*Petrochelidon lunifrons*) and Barn Swallow (*Hirundo erythrogaster*) in this high altitude. Nests of the White-headed Woodpecker (*Xenopicus albolarvatus*) and Western Bluebird (*Sialia mexicana occidentalis*) were found in excavations in dead pines, and eggs of

the Violet-green Swallow (*Tachycineta thalassina*) were taken from holes in piles of an old wharf. Two sets of six eggs were found.

During our stay we observed 48 species.

On June 15th near Fallen Leaf Lake a nest of the Blue-fronted Jay (*Cyanocitta stelleri frontalis*) was found. It contained four large young, and was placed on the branch of a small fir in plain view, 8 feet up.

Between Bijou and Tallac at the mouth of the Little Truckee River is an extensive marsh running about five miles along the lake shore, and from two to three miles inland. Here an immense aggregation of land, marsh and water birds keep the place resonant with their mingled cries. I observed two species of Terns in the marsh, and both were already laying. The

in the background. This light, portable canvas boat enabled us to go through the thickest tules, over pond lilies or shallow water, with ease. The length of this article will not allow more than a passing notice of the numerous nests of the American Coot (*Fulica americana*) in the tules and those of the Spotted Sandpiper (*Actitis macularia*) and Killdeer (*Egialitis vocifera*) on the sand-pits, or the large flocks of Gulls (*Larus californicus*) and American White Pelican (*Pelecanus erythrorhynchos*) which evidently do not breed here.

A noticeable bird was Wilson's Phalarope (*Phalaropus tricolor*) which was undoubtedly breeding. I shot one for identification and it was pitiful to see how the mate would not



NEST OF FORSTER'S TERNS.

nests of Forster's Tern (*Sterna forsteri*) were placed in the highest tules or among marsh grass or water lilies at their edge in deep water. They were uniformly the same, composed of dried tules containing one, two or three eggs. Quite a number of nests of both Terns contained but one egg in which incubation was advanced, so I regard this as a set. Most of the Terns nested in small colonies, two dozen nests or so together. A small abundant fish in the marsh called "Chub" seems to be the principal food of *forsteri*. The Black Tern (*Hydrochelidon nigra surinamensis*) occasionally nested in the above situations, in which case they were almost as large and as substantially built as those of *forsteri*, but the majority were placed on floating drift-wood in a foot or so of water, carelessly made of fine tules and marsh grasses. The picture shows a few nests with our canoe

forsake the spot, but continued circling around uttering its almost human cry.

Of the ducks, the Mallard (*Anas boschas*) was by far the most abundant. I was shown a nest among the willows on a sand-spit which contained eggs in May. On my visit a few stray feathers and egg shells were left. I noticed a Wood Duck (*Hix sponsa*) swimming in the lake off the mouth of the river with her numerous family on her back.

The Blackbirds, and it is difficult to say which was the most numerous, were nesting in countless numbers. The Yellow-headed (*Xanthocephalus xanthocephalus*) placed hers a foot or so up in the high tules, while those of the Red-winged (*Agelaius phoeniceus nuttalis*) were built among the willows or marsh grass in the water. On account of the unusually heavy fall of snow this year the lake continued to rise rapidly in

June, flooding hundreds of nests of this bird. Many were deserted, some contained eggs and others drowned young. Here, strange to say, Brewer's blackbird (*Scolecophagus cyanocephalus*) nests on the ground usually in a depression, although pine trees, one of their favorite nesting sites on the coast, fringe the marsh on all sides. In Nevada, between Reno and Carson, thousands of these birds were nesting in the sage brush owing to the lack of trees.

It was on June 20th, near the Nevada summit that, with regrets we took our last look at the lake where the time had been so pleasantly

large young. These are both common birds in Nevada.

On leaving Beckwith, Plumas County, next day, we again entered the timber lands, the road following the head-waters of the Feather River. On account of the numerous mines in this section most of the water is extremely muddy and American water Ouzels (*Cinclus mexicanus*) were rare. Along a stream of crystal clearness, however, about 10 miles from Quincy we noticed a nest of this bird on a large boulder. This nest contained four young with rather prominent appetites.



NESTS OF BLACK TERNS.

spent. Far below was clear, cool, placid Tahoe stretching far away to the north and on all sides, the noble forests, extending from the lake well up to the snow capped peaks. On the east was Nevada, the last state in the Union, as barren, and bare as the moon! It was a change! three days of travel under the broiling sun through a monotonous succession of sage brush, hills and plains.

On the 24th of June, we again passed over the state line in Lassen County. Here between Chat and Beckwith Pass I noticed Woodhouse's Jay (*Aphelocoma woodhouseii*) and in a willow along the road I observed a nest of the American Magpie (*Pica pica hudsonica*) containing four

A short stay was made at Buck's Ranch, (Plumas County), at an altitude of 5,000 feet, and although late in the season a set of four eggs of Traill's Flycatcher (*Empidonax trailli*) was taken June 29th, from a nest in a willow along a small brook. This bird is less common than its cousin, the Western Wood Pewee (*Contopus richardsoni*) which is one of the most abundant birds in these mountains.

I may mention that the following species were shot, making identity positive, Wilson's Phalarope, Thurber's Junco, White-crowned Sparrow, Red-winged Blackbird, Forster's Tern and Traill's Flycatcher.

LIFE HISTORY OF THE PRAIRIE WARBLER (*DENDROICA DISCOLOR*).

BY JNO. W. DANIEL, JR., Lynchburg, Va.

Among the so-called Wood Warblers (*Mniotiltidae* of the genus *Dendroica*, we find many types of bird-life that for delicacy of form and coloring, if not for warbling, rank first upon the list of North American birds.

Ornithologists and Oologists who have been much afield are not likely to forget their first acquaintance with any member of this interesting family of birds.

The striking coloring of some of the forms, as in the black-burnian, Magnolia, Cerulean and others, make them general favorites, with highest rank in aesthetic ornithology. From the Cape May Warbler, which occupies the first place in the American Ornithologists' nomenclature to the Prairie Warbler which is the last, the family presents an array of beautiful species. Passing them all by, I would select the last on the list, the Prairie Warbler (*Dendroica discolor*) for the subject of this article because with this species I am more familiar than with any of its relations.

On May 12th, 1890, according to my notes, I found the Prairie Warbler for the first time at Lynchburg, and at every season since, have found it breeding abundantly among the thickets of dogwood and scrub-oaks, among clumps of blackberry bushes in the pasture lands, and in the scattered growth of small pines with which many of the hills are covered.

A locality particularly favorable to many pairs of these birds, however, is a slope covered with a mixed growth of scrub-oak, dogwood bushes and blackberry briars, along a small stream called "Blackwater Creek." On the outskirts of the thicket there is a straggling growth of small pines. The Warblers breed in surprising numbers all along the edges of the thicket and wherever the growth is broken by "clearings;" they seem to prefer the more open parts, rather than where the bushes and briars are dense and tangled.

They arrive early in April, appearing in small numbers between the tenth and fifteenth, and arriving in greater numbers during the rest of the month. It is in the season of arrival that most of the birds are singing. The song is one which once heard is not likely to be forgotten. It is unusual, quaint and striking. Six or seven syllables, uttered in crescendo with emphasis on next to the last note, sound something like "zee-zee-zee zee-zee zee-zee." But it is hardly describable. Dr. Cones characterizes it as "sounding like a mouse with the tooth ache." Soon after arrival, the birds commence nest building. The nesting site is very variable. The average site is an upright crotch of a dogwood, scrub-oak or a small pine, from three to five-and-a-half feet up, though sometimes lower, and not infrequently higher. When the nest is in a blackberry bush the height varies from two to four feet. It is always firmly attached at the sides by means of cob-webs and vegetable fibre to the limbs or briar stalks which support it. It is a snug little structure of closely woven shreds of weed-bark, cottony vegetable substances and various fibres, compact and cupped. The interior lining is

usually of fine and softer material of the same nature, sometimes plant-down, cow and horseshair sheep's wool and occasionally a few feathers.

Nest building having commenced late in April or early in May, the nests are usually completed by the 8th of May. A day seems to elapse before the first egg is laid. The four eggs are deposited during four consecutive days, an egg being laid early each morning. It is interesting to note the uniformity which the various pairs of birds of this species in a locality carry out in the matter of laying. The majority of nests contain a similar number of eggs to the incompleated sets, during the period of laying, the nest holding a greater or less number of eggs being in very small percentage. I have observed this occurrence for many years in the same locality, and have found as many as fifteen nests, twelve containing three eggs, two containing two eggs and one containing four eggs during a day's (May 12th, 1896) search. The 13th of May has always been my lucky date for full sets of four eggs, it being rare to find nests containing that number of eggs before that date. Nearly all nests found on the twelfth contained three eggs, and these sets would be full (four eggs) on the following day. The birds are of sociable disposition, and where one pair is found nesting, others are likely to be found in the same neighborhood. Occasionally isolated pairs are found, but this is not often. Once a locality is selected by pairs of birds and its conditions be at all favorable, they seem to become strongly attached to it, and will return in successive years, each pair of birds breeding near the spot where their nest of the previous year was placed.

During the early part of the nesting season the birds sing a good deal, but as the weather becomes warmer, the singing ceases, and the peculiar trilling is not heard again during the year, there not being a second song period. The male as well as the female attends to the duties of nest building, incubation, and the rearing of the young.

The food consists of insects, such as caterpillars, spiders, larvae, etc.

When the nests are approached, the birds are usually very demonstrative, and often closely approach the intruder, uttering a very faint complaining note sounding like "tsip-tsip-tsip."

The period of incubation appears to be fourteen days, averagely, though sometimes longer. The young remain in the nest about ten days, and are fed by the parents until they have attained nearly the size of the parents.

It is questionable whether two broods are reared in one season. I have found fresh eggs during the first week of June, but from all data at hand am inclined to believe that one brood a season is the rule.

Four eggs constitute the full set, though in rare instances only three eggs are laid to the set. They are very pretty little eggs, varying in color from simple ovate to elliptical-ovate and elongate-ovate. Their ground is usually a clear white, occasionally (in fresh eggs) of a

greenish tinge and sometimes of a creamy cast. The markings are confluent at the greater end, invariably wreathed, and varying greatly as regards density, in a series of sets. Aside from the wreath at the larger end, the area from it toward the smaller end is faintly and sparingly speckled with minute dots and streaks of cinnamon mid-dark brown. The deeper shell markings are of lilac. The other two prevailing colors are the cinnamon and the darker brown, intermixed sometimes with scant pencilling of black in the wreath.

Four typical sets of four eggs each, collected on the 13th of May, and selected from a large series after the following measurements in millimeters:

Set number one: 15 x 12.50; 15 x 13; 15 x 12.50; 15 x 12.

Set number two: 17 x 13; 17 x 13; 17 x 13; 17 x 13.

Set number three: 15 x 12; 16 x 12.50; 15 x 12; 15.50 x 12.50.

Set number four: 17 x 12; 16.50 x 12; 16.50 x 12; 17 x 12.

The young of the year are quite different from the old birds, but may be readily identified by their smaller size, as compared with other members of the family, and the absence of wing bars.

During the late summer and early fall, the Prairie Warbler exhibits a strong attachment for pine woods, where the trees are more dense and of greater size than those of its breeding haunts, and where it seems to find a plenitude of food.

Late in September and early in October they leave for the south, all having disappeared by the middle of the latter month.

CAMPING ON THE OLD CAMP GROUNDS. II.

BY PAUL BARTSCH, Washington, D. C.

Continued from Vol. V, page 100.

Large flocks of Blackbirds were crossing the river, seeking their roosting ground. These flocks do not appear near as large as they were ten years ago, but even now they are composed of thousand of individuals ranking I should say, Bronzed Grackles first, Red-wing second, and Cowbirds third.

As eve drew near we set out for King's mansion. A roomy log cabin situated on the right bank of Skunk River about a quarter of a mile from our isle. We walked up towards the house which stands on a ridge at some little distance from the bank, midst an immense cornfield, among which numerous gigantic trees appeared which had been girt, and which now extended their bare branches to the sky as if calling on

Such Owl music, conversation, debate and oratory must be heard to be appreciated, they can only be rendered in Owl language and that by Owls.

We had anticipated a Coon hunt, but found to our dismay that the King's Palace was occupied by a man with a less pretentious name, who did not even own a Coon dog. Discouraged we turned our back on the place, and after holding a pow-wow we decided to try our luck with Leslie who lived, in '95, some three miles nearer Green Bay. As we plied the blade, the sun was fast sinking beneath the forest tops and a Mink who had ventured on his foraging tour donated his skin to the National Museum. Bats, Chimney Swifts and Night Hawks contested for



THE CAROLINA WREN

THE HOODED WARBLER.

heaven to witness such misdeeds and imploring the wrath of the gods which indeed at times seems granted, when spring floods make it necessary for the inhabitants of the house to remove to the upper rooms. These cornfields and trees recalled many a pleasant night. They are a favorite resort of the Owls and Racoon. Many, many times did we lay on our bunks and laugh at the Owl's concert, to which Bubo would treat us, until our very sides would ache.

their evening meal, then all was still, save an occasional call of the Whip-poor-will. The moon was up, and by her mellow light we slowly paddled through the silent night.

We at last reached Lesleys, but found that he too had changed quarters, two miles further down stream. The present occupant of the shack, too, was a Coon-dog-less man, so we resumed our journey, for "a hunting we would go."

We did not succeed in finding Leslie Manor, and as heavy clouds and occasional lightning in the south promised a shower, we decided to turn over to Dallas City, and seek quarters in some hotel in preference to sleeping under a skiff in a rain storm. After manuevering around a number of dams, we arrived at the city where we found quarters and food.

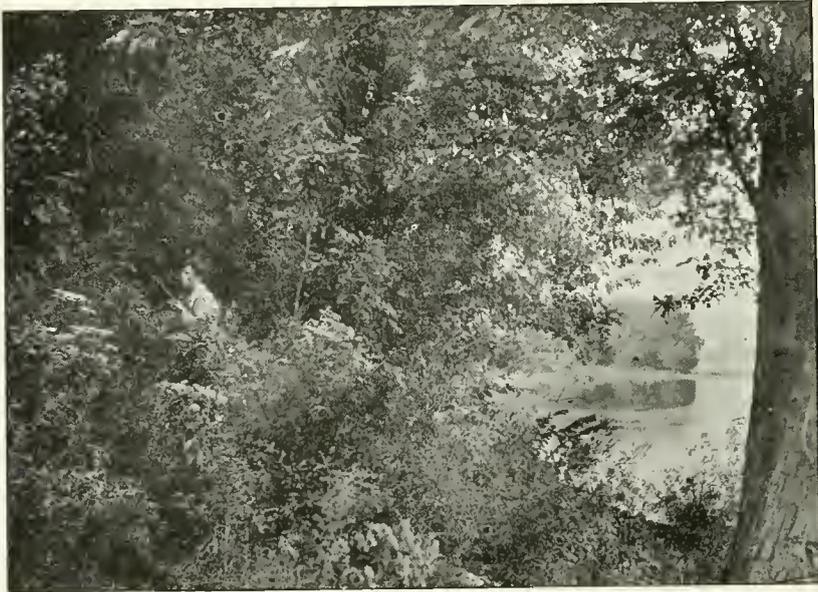
Sometime during the night our room was suddenly flooded with light, a steamer was about to come to anchor, and was seeking her pier. How this incident brought back the days of '95 when oft at night, when all was silent and the very leaves of the quaking aspen o'er head seemed at rest, and even the mighty roar of the waters rushing through the dam seemed hushed, permitting the fainter tinkling sounds to be heard, then of a sudden would our tent become illuminated almost as bright as day, and

Water Thrushes, Oven Birds, Trails, Flycatchers and Catbirds.

We finally reached our isle again. Our party which had agreed to meet us were present also. We prepared a second breakfast, and after casting for bass for an hour without even so much as a strike to reward our patient labor, we returned to the birds.

A Grebe had arrived over night, and was giving performances in diving, above the dam. As we followed the footpath north, along the river edge we got a glympse at one of those flaming bits of animation ordinarily known as Prothonotary Warbler. From a dead branch a Wood Pewee sounded his pe-a-we, while a Least Flycatcher responded from the shady retreat of the low arching border.

We returned and continued our walk in the opposite direction, where we noticed perhaps the



LOOKING UP THE MISSISSIPPI FROM DOLLAR ISLAND.

we knew that a passing steamer was paying his salute by playing its search-light upon our white abode.

The morning of the 30th promised a fair day. We aroused our landlord, and his sleepy spouse prepared a breakfast, perhaps the earliest ever served in the history of that hotel.

Long before Old Sol sent his rays askance over the eastern hills we had passed our paraphernalia into our boat and had crossed the river for Iowa. Here and there a bird voice broke the stillness of the morning, and a very chorus sounded their praise when he raised his head and beamed on all creation.

The lively wit-che-we-wha-wit occasionally varied with the long drawn che-weee-a, of the White-eyed Vireos, birds I once considered very rare, greeted us all along the willow covered rip-raps. Here we also met several Grinnells,

first Golden Crowned Kinglet of the season. A family of Cardinals and the first specimen of the Wilson Thrush which we have on record for Burlington and vicinity, in company with its near relative the Wood Thrush. I had often looked for this bird, had several times heard of its occurrence, and even found it in the form of a Wood Thrush in the collection of one of the reporters. I could never quite understand how any one could confuse these two birds, so different in appearance and habit. We frightened a Kentucky Warbler and an Oven Bird which were scratching for insects under an immense fallen, half decayed tree, both sought the dense cover of the weeds, but were easily recalled by the ever ready and anxious squeak.

In the willows which form a dense coveret on the bar on the southwest side of the island, we discovered quite an assemblage of Warblers,

It seemed as though we had arrived in the height of their autumnal migration, for everywhere, in each place, we found representations of this delightful family. Not less than twelve different species were present in this small strip of willow which is not more than 100 by 30 feet in size, and I believe none of the trees exceeded 15 feet in height. It was a motly crowd. My notes speak of a Golden-crowned Thrush, several Chestnut-sided Warblers, a Blue-wing Yellow Warbler whose querulous voice now is forever hushed. A busy Black and White Creeper, a trim Canadian Flycatcher, two of the beautiful lively Wilson's Black-eaps, who vied with a number of Golden-crowned Kinglets, just returned from the north, in flirting their wings. A Water Thrush was lured from its tangle in the woods and swelled the number.

As we emerged from this dense cover we noticed a Tennessee Warbler cross the river and submit his inanimate form to closer study. A Blue Gray Gnatcatcher was travelling through the tops of the same trees, while at their very base a House Wren (*Troglodytes aedon aztecus*) was trying to engage us in a game of hide and seek.

From the depth of the woods a Red-eyed Vireo was babbling his now sleepy song, and a Yel-

low-bellied Woodpecker rewarded, us by adding his name to our list, for a tramp through the interior of the island. The last accession was entered on the north side, Vireo gilvus was the name of the applicant.

The day though long, was fast nearing its close and we rejoined our friends and accepted of their bounteous stores to regale the inner man who had been sadly neglected all day. But who indeed has time to waste discussing food when birds are as numerous as they were on these days, which will always be recalled with the flaring mark of "Red Letter Days."

Evening shades were falling, the Woodduck and her progeny were seeking their dusk sheltered feeding ground. Blue Herons and now and then a Night Heron would sail lightly with measured beat to their post, then all was still.

As we maned our boats the great orb slowly rose from the eastern timber and flooded all this wondrous scene with her mellow light. Oh, what a night it was! Even now as I write these lines I feel the spell come o'er me which then held each and every one of us entranced. Silently and quietly we plied the blade, dreading lest the slightest sound might cause this scene enchanting, to fade like a dream at dawn.

THE CAGE BIRDS OF CALCUTTA.

By F. FINN, Deputy Superintendent, Indian Museum, Calcutta.*

The taste for keeping pet birds is a very old one in India, exotic forms, such as Cockatoos, having been imported so long ago as the time of Jehangir, to judge from the representation of a yellow-crested species in a picture dating from the reign of that monarch which I had an opportunity of inspecting some time ago. And even to-day in Calcutta many birds are commonly to be seen in captivity hailing both from various parts of India itself and from other countries, although "the fancy" is no longer what it was, and both the demand and supply have dwindled away sadly. Nevertheless, enough birds are to be seen to arouse keen interest in English amateurs; and this is especially noticeable in the case of "soft-billed" or insectivorous and frugivorous forms, which are very extensively kept in India.

Calcutta rejoices in a very well-known bird-market in Tiretta Bazaar; and as this is within an easy walk of the Museum, I have long been in the habit of paying it frequent visits. One or two dealers in the Provision Bazaar also keep cage-birds; but Tiretta is the leading emporium for pets, always excepting Mr. W. Rutledge's establishment in South Road, Entally. There business has been carried on for nearly half a century, Mr. Rutledge dealing in living animals of all kinds; and many very choice birds pass through his hands, though he naturally does not trouble himself greatly about the common species. To him I have long been indebted for much information concerning birds and the method pursued in keeping them.

Few birds seem to be kept or bred in aviaries here; small cages with a single inmate, or larger receptacles containing several, are chiefly in vogue; and as the objectionable custom of covering up birds kept for song is almost universally followed, it is not easy to determine the exact species of the occupants in many cases, though the note often affords a clue to the captive's identity. Cages for small singing-birds are usually oblong with a vaulted roof, and provided with two perches, or are square with a pyramidal top containing only one perch; they are fitted with large comfortable handles, as it is the custom to take cage-birds out continually in order to give them fresh air.

Larger birds are kept in big wicker cages with a domed or hemispherical top, and Parrots in similar round domiciles of iron, or chained to iron swings. All native cages have a barred floor, instead of the drawer arrangement so familiar to home amateurs, but a mat is often provided to cover the bottom. Food and water-vessels are always placed inside, in my opinion very wisely. Sand is not given, except to Larks and Partridges.

"Soft-billed" birds are fed on the flour of gram, a kind of pulse, made up into a paste with ghee (clarified butter). This "satoo" seems to suit them very well; it is supplemented, in the case of purely insectivorous species, by a daily ration of live maggots and grasshoppers. The breeding of the former and the collection of the latter form the trade of a number of professional bird-feeders, who, on the receipt of a small monthly

*Reprinted from *The Iris*, for July 1908, p. 437-441.

sum, will call daily at the houses of their patrons and supply insectivorous birds with everything needful. With the exception of Parrots, few seed-eating birds are kept simply as pets, and their treatment calls for no special remark.

Many birds are imported from China, and come over in excellent condition, being housed in strong but light oblong or square cages of split bamboo, well put together and fitted with trays. The insectivorous birds are fed on shelled millet and small insects, mixed together and given quite dry and plain; they thrive excellently on this diet, which is far better than the mess of "satoo" and repulsive maggots given here.

From the farther East come chiefly Lories and Cockatoos, fastened to perches by a wide ring of cocoa-nut shell, through a hole in the circumference of which the foot of the bird is slipped.

I think by passing the third toe back against the shank. Although so closely attached to the perch—which is merely passed through the ring that plays upon it—these birds appear to fare well and keep in good condition. The Lories are fed upon rice-and-milk sop, which food is not given to any other birds, so far as I am aware.

It is a curious fact that, to all appearance, the species brought down from the hills often stand the Calcutta climate nearly or quite as well as those which naturally inhabit warm countries. This same remark applies to the few European kinds imported; some, indeed, of these temperate-climate species seem to feel the heat less than denizens of the tropics.

I am very glad to say that, on the whole, the captives are well treated here. The custom above alluded to, of wrapping up the cages in cloths, is certainly regrettable, but the general condition of the birds shows that they are well looked after. Nor are they confined in such a miserable small space as is sometimes the case in Europe, notably with Linnets in England.

The importation of foreign birds is not likely, in my opinion, to have any great influence on the Indian fauna. Of course many escape, but these, if they evade the numerous Crows, ever watchful for a stranger or a weakling, are not numerous enough to establish themselves, even if the climate prove suitable for their propagation. I have some reason, however, for thinking that the Java Sparrow (*Munia oryzivora*) is becoming established here, as in so many other places. But this need be no matter for regret, as the species is one of exceptional beauty, and though it is undoubtedly destructive in some places, it has never become a pest in India, where it has existed in a wild state ever since Jordan's time. I therefore feel no shame in confessing to having liberated at different times some scores of individuals, in the hope of giving it a footing as a wild species in this part of the country; especially since, being so numerously imported, so often escaping, and being so well able to look after itself, it was likely to take up such a position without deliberate assistance on the part of anyone.

I will now proceed to treat the various species of cage-birds to be met with here under their families as given in the Bird-volumes of the 'Fauna of British India,' the scientific nomenclature of which I shall employ, interpolating

the exotic forms under the names employed in the British Museum Catalogue of Birds.

FAMILY CORVIDÆ.

Considering the popularity of the members of the Crow tribe in England, I was rather surprised to find that in Calcutta they did not commonly figure as pet birds. The Magpie (*Pica rustica*) may, however, occasionally be met with, usually as a Chinese importation, and the common Indian Tree-Pie (*Dendrocitta rufa*) is often to be observed in the Bazaar. A few Himalayan forms are also pretty regularly brought down—the two species of *Urocissa* (most often *U. occipitalis*), the beautiful *Cissa sinensis*, *Garrulus lanceolatus*, and sometimes *G. bispecularis*; while Mr. Rutledge occasionally gets a few Red-billed Choughs (*Fregilus graculus*), which actually do not seem to suffer from the heat. I noticed that these birds looked distinctly larger than the European specimens I used to see at the London Zoological Gardens, and had deeper red bills and feet.

Of exotic Corvidæ I have seen at Mr. Rutledge's establishment *Corvus australis* and the Chinese *Corvus torquatus*, while quite lately he had a fine specimen of the Brazilian *Cyanocorax cyanopogon*.

Among the Tits the only species I have met with in confinement is *Machlolophus xanthogenus*, a few individuals which had been brought to Calcutta having done very well.

FAMILY PARADISEIDÆ.

Birds of Paradise are of course always scarce and very expensive, but a few males of the two ordinary yellow-plumed species (*Paradisca apoda* and *P. minor*) have appeared for sale during the six years I have spent in Calcutta. They thrive well in confinement, and are much thought of by the natives, who identify them with the legendary *Huma*, which never alights, and confers royalty on whomsoever it chances to overshadow in its flight! Mr. Rutledge tells me that the Ameer sent a man from Cabul on purpose to inspect the first specimen he obtained, and to report on its identity with the bird of tradition.

FAMILY CRATEROPIDÆ.

The Bblers and Bulbuls are particularly suitable for cage-birds, as they bear captivity remarkably well, and have many recommendations as pets, especially in the case of the former.

Most esteemed, perhaps, is the Chinese Jay-Thrush (*Dryonastes sinensis*), which is only known here as an imported bird and under its Chinese name of *Peko*. It is a very fine songster and an excellent mimic. A few arrive from time to time and find a ready sale. I know of a very good specimen which is at least 14 years old and certainly shows no sign of age. Another Chinese bird of this type, and similarly imported in small numbers, is the Huamei (*Trochalopteron canorum*), also much prized as a songster.

Some common Indian Jay-Thrushes, *Garrulus lanceolophus*, *G. pectoralis*, *G. moniliger*, *Gram-*

maloptila striata, *lauthocincla rufigularis*, and one or two others, are pretty regularly brought down in the winter, especially the first-named, which is in some demand for export.

Other Babblers which arrive in consignments from the hills are *Pomatorhinus schisticeps*, *P. erythrogenys*, and *Lioptila capistrata*, and, among the smaller species, *Mesia argentauris*, *Siva cyanuroptera* and *Yuhina nigrimentum*. None of these, however, come into the market in any quantity.

The charming little "Pekin Robin" (*Liothrix lutea*) is numerously imported in winter—generally from China—and hence is almost always to be procured. *Zosterops simplex* is also a very common captive, and attempts are sometimes made by Bazaar dealers to pass it off as a "Hummingbird"!

Chloropsis aurifrons, well known as the *Harewa*, is often on view, and is one of the most delightful cage-birds, being easily kept, and possessing the recommendation of being a very clever mimic as well as very ornamental. If hand-reared, it is very tame; but individuals vary much in temper, and some are quite impossible companions for any small bird, while others are perfectly peaceable. As the sexes are so much alike in this species, I have not been able to discover the reason of this difference of disposition, whether it be personal or sexual. The fine *Chloropsis hardwickii* is comparatively scarce, and *C. jerdoni* is seldom to be had.

The species of *Chloropsis* are often called Green Bulbuls, but they cannot be placed far from *Egithina tiphia*, obviously a small Babbler, which is sometimes kept here (but rarely, being a delicate species). It is locally known as "Tofik." Another small Timeliine form occasionally on sale is the Gulab-Chasni (red-eye) (*Pycnorhis sinensis*) a most amusing little bird, very impudent, and mischievous when in company with others.

Of the true Bulbuls, the common *Molpastes bengalensis* is by far the most popular captive. It is not so often caged, however, as tethered to an iron T-shaped perch padded with cloth, the cord being fastened to a soft string round its body. This is to further its employment as a fighting bird, that being the purpose for which it is kept. Two individuals are made hungry, and then their jealousy is excited by offering food to one only, which of course provokes a fight. The sport is carried on during the winter, after which the birds are released, with the exception of such as have proved worthy of maintenance for the future.

This is the only species employed in such a way, but several other Bulbuls may be seen caged, especially the almost equally abundant *Otocompsa emeria*. *O. flaviventris* comes to hand occasionally in small numbers, and sometimes considerable supplies of *Molpastes leucotis*, *M. leucogenys*, and the Chinese *Pycnonotus sinensis* arrive, but these cannot be reckoned on.

A few examples of *Hypsipetes psaroides*, *Hemixus flavata*, and *H. macclendani* have been brought down in the winter of late years.

Before leaving the Crateropodidae, I should mention that a few specimens of the splendid

Myiophoneus lemmincki have passed through Mr. Rutledge's hands, and that lately my friend Mr. E. W. Harper secured from him a fine imported specimen of the Chinese *M. caeruleus*, which he has sent to the London Zoological Gardens. But undoubtedly the members of this genus were wrongly placed in this family, being certainly true Thrushes. The distinction between them and the Babblers is perfectly obvious to any bird-keeper or field-naturalist, however hard it may be to make out from skins.

FAMILY DICURIDÆ.

Only one bird of this family is commonly kept here—the Bhimraj (*Dissemurus paradiscus*); but few specimens are brought in, and these are hand-reared birds in poor condition, which seldom live long, as they require—but do not usually get—a very large cage. This species is, as Jerdon correctly remarks, an excellent mimic. I have even heard that it will occasionally talk, and I have myself known one individual that could imitate the song of a canary to perfection, and also mew like a cat; while another with which I am at present acquainted not only possesses the latter accomplishment, but whistles two or three lines of a song with absolute accuracy of execution.

The Kesraj (*Chibia hollenlotta*) is sometimes on sale, but is not popular, so far as I know; the Dhoul (*Dicurus caeruleus*) is occasionally to be procured, and is said to whistle very well.

FAMILY LANIIDÆ.

The Indian members of this family are hardly ever caged here, though some consignments of Minivets (*Pericrocotus speciosus* and *P. brevirostris*) have arrived but have not thriven.

The Australian Crow-Shrikes, or Magpies (*Gymnorhina leucanota* and *G. tibicen*) are, however, not unfrequently imported; they thrive well and fetch good prices on account of their well-known whistling and talking abilities. I lately saw a specimen in the possession of Mr. Rutledge which had pale grey on one side of the back and black on the other; this was, I presume, a hybrid between the two species.

FAMILY ORIOIIDÆ.

Orioles are not generally kept, and the few that are to be seen do not thrive well, especially the common *Oriolus melanoccephalus*. *O. trailli* bears confinement far better than the yellow species, being less restless. It also looks very different from them in life, as it keeps the head-feathers erect, and has a more upright carriage, in addition to its striking light-yellow irides. The eyes of the young birds are, however, dark brown.

(To be Continued.)

THE OSPREY OR FISHHAWK: ITS CHARACTERISTICS AND HABITS.—VII.

BY THEODORE GILL, Washington, D. C.

Continued from Vol. V, p. 106.

A superstition somewhat current is mentioned by Mr. Howard Staunton in his edition (1857-1866) of the Plays of Shakespeare. It is that the bird has the power of influencing or "fascinating" a fish. The lines from Shakespeare at the head of the present monograph were supposed to have a recondite meaning and allusion to this supposed faculty. Thus, the Rev. Charles Swainson, in his "Provisional Names and Folk Lore of British Birds" (p. 141), treats the belief as follows:

'Shakespeare alludes to the osprey in *Coriolanus*, Act IV, sc. vii.

"And thus loq. 'As is the osprey to the fish who takes it
By sovereignty of nature.'

'Here,' says Mr. Staunton, 'the image is founded on the fabulous power attributed to the osprey of fascinating the fish on which it preys. Thus in Peele's play called *The Battle of Alcazar* (1594), Act II., sc. i.:

'I will provide thee of a princely osprey,
That as she lieth over fish in pools,
The fish shall turn their glistening bellies up,
And thou shalt take thy liberal choice of all.'

"And also in Drayton, *Polyolbion*, song xxv.

"The osprey, oft here seen, tho' seldom here it breeds,
Which over them the fish no sooner do espy,
But, betwixt him and them by an antipathy,
Turning their bellies up as though their death they saw,
They at his pleasure lie, to stuff his gluttonous maw."

The Rev. Mr. Swainson has also resurrected a strange conceit respecting a lopsidedness of the osprey.

"An old belief is mentioned by Harrison, in his 'Description of Britain,' prefixed to Holinshed's 'Chronicle,' vol. i, p. 382, who writes respecting the osprey, 'It hath not bene my hap hitherto to see anie of these foules, and partlie through mine owne negligence; but I heare that it hath one foot like a hawke to catch hold withall, and another resembling a goose, wherewith to swim; but whether it be so or not so, I refer the further search and trial thereof to some other.' Giraldus Cambrensis ('Topography of Ireland,' p. 38, ed. Wright) improves on this, moralising as follows:—'In like manner the old enemy of mankind fixes his keen eyes on us, however we may try to conceal ourselves in the troublesome waves of this present world, and ingratiating himself with us by temporal prosperity, which may be compared to the peaceable foot, the cruel spoiler then puts forth his ravenous claws to clutch miserable souls and drag them to perdition.'"

Holinshed's Chronicle, be it known, was originally published in 1577.

No legends or folk lore relating to this bird among the French have been recorded by Eugene Rolland in his *Faune Populaire de la France* although a number of popular names current in

different parts are given. (Consult *Les Oiseaux Sauvages*, p. 8.)

Here it may be noted that the Rev. Mr. Swainson has affirmed that in an unnamed part of "Italy," the Osprey is said to be known by a designation whose significance can be well appreciated by one who has seen the bird precipitating itself on its prey— it is "*Angiusta plumberia*." Mr. Swainson says that this means "the leaden eagle," and that it is so named "because its sudden descent on its prey is like the fall of lead." It is proper to add that the name is not enumerated among the popular names recorded by Giglioli in his "*Avifanna Italica*," and that the words themselves are not to be found in ordinary Italian dictionaries.

VARIATION AMONG OSPREYS.

There are three well marked variations coincident with differences of geographical range among the representatives of the genus *Pandion*. The variants are characteristic respectively of (2) America, (1) Eurasia, and (3) Australia. They have been distinguished or differentiated in the following order:

1. The Eurasiatic form, is of course, that to which the name *Falco haliactus* was originally given. The binomial compound, *Pandion haliactus*, was first published by Cuvier in 1817.

2. The American form was first named from different representatives as two varieties of "*Falco haliactus*" under two designations by Gmelin in 1788; those names are *carolinensis* and *cayennensis*, the former being ranked as variety γ and the latter as variety δ . These names are not the expressions of advance of knowledge or keenness of appreciation but, like very many other new names introduced by the same author, of imperfect knowledge, misconception and rash conclusions; no real differential characters were given. The variety *carolinensis* was based on the "Fish-hawk" of Catesby (*Catesb. Carol.* i, t. 1.) or rather the "Var. A. Carolina O." of Latham (*Syn.* i, p. 46) and the *cayennensis* on "Var. B. N. S. Cayenne O." of Latham (*Syn.* i, p. 47).

These names of Gmelin have been quoted as used by him in a specific sense (*Falco carolinensis*" and "*Falco cayennensis*") but the facts are as stated above. This condition is to be especially considered* because Gmelin named another "*Falco*" "*Falco cayennensis*" (p. 269) also based on a bird described by Latham as the "Cayenne Falcon" and which is the *Leptodon cayennensis* of recent authors. It may be added that the old naturalists did not intend to have their names given to varieties used as specific and could not have foreseen the extent of such usage by their distant successors. Their immediate successors, when raising a named variety

*Among others, the "American Ornithologists' Union," in the "Check-list of North American Birds" (2d ed., p. 141), have fallen into this error.

to specific rank, gave a new one. This was the general usage till comparatively lately, both in zoology and botany. Asa Gray, for example, pursued such a course to the end of his career; in fact, the old authors generally gave names to varieties as qualifying subordinate terms rather than as quasi-specific names. Thus, Gmelin's *Falco haliactos y carolinensis* was the *Carolinian* variety and the *Falco haliactos δ cayennensis* the *Cayenne* variety of the species.

This is the logical sequence of the words used by Gmelin, but, as all familiar with the Linnaean literature know, such names were not given in regular sequence but in the margin, thus: 26 [=number of species].

Haliactos,	26
arundinaceus	β
carolinensis	γ
cayennensis	δ

the species being numbered and the variants indicated by Greek letters only.

Under such circumstances, some might still consider that the varietal names should not be used in a specific sense and consequently that a name given later to an American form by Vieillot should be used instead. But the name given to Gmelin was fortified subsequently by Daudin.

Daudin, in 1800, in his *Traite Élémentaire* (ii, 69), expressed specific and subspecific ideas in nearly the same manner as some modern naturalists. Thus he treats the Osprey in the following manner:

p. 67.

xxxvi, Aigle balbusard *Falco haliactus*.

p. 69

Voici les variétés du Balbusard.

A. Balbusard des roseaux. *Falco arundinaceus*.

B. Balbusard de la Caroline. *Falco carolinensis*.

C. Balbusard de Cayenne. *Falco cayennensis*.

It is, then, the second name *cayennensis* that will have to be replaced and the *Leptodon* may be designated as *Odonotriorchis palliatus*, the later name *Falco palliatus* of Prince Max coming into use. *Leptodon*, it may be added, cannot be used for the accipitrine genus as it had long before its use in ornithology been pre-occupied in conchology by Rafinesque (in 1820).

The name *carolinensis* was first used with full specific rank for the American bird by Charles Bonaparte in 1838. He had been preceded, however, in the differentiation of that form as a species by Vieillot in 1807.

3. The Australian Osprey was first differentiated in 1838 by John Gould and the name *Pandion leucoccephalus* given to it.

4. An insular Osprey occurring only in the Bahama Islands was distinguished by Mr. C. J.

Maynard in 1887 as a peculiar species under the name *Pandion ridgwayi*. No specimens are in the National Museum and I have been unable to examine a specimen but Mr. Robert Ridgway, who saw the type many years ago, thinks it is a well marked form entitled to subspecific rank at least.

As the only notice of this form was published in a periodical of extremely limited circulation and which, indeed, is not in any library I have examined, it is reproduced here with the exact words and punctuation of the original.

"BAHAMA FISH HAWK.

Pandion ridgwayi. Head and neck all round entire lower parts white, excepting a narrow line of dusky back of eye, and a slight streaking of brownish on top of head, between eyes, above rather pale brown, each feather margined with lighter. Bill and cere dark bluish, iris yellow, feet pale blue; dimensions, wings, .17; bill, 1.35; tarsus [tarsus], 2.35. Single specimen obtained at Andros, but I saw others similar."

The descriptive notice appears in "The American Exchange and Mart and Household Journal," a quarto weekly periodical published at Boston and New York for "5 cents" a number. Its circulation among naturalists was certainly limited, for I have been able to learn of only a single copy in any naturalist's possession, that owned by Mr. J. H. Riley kindly lent by him for the present occasion. Nevertheless, on the front page, it is claimed for the "circulation of the Exchange and Mart for 1887, not less than 300,000 copies guaranteed"! It was, in fact, an advertising medium circulated to a large extent gratuitously.

It seems that the notice of *Pandion ridgwayi* and four other species appeared twice in this periodical; first in the issue of January 18, 1887, and again, in amended form, in that for February 5, 1887.

The first issue I have been unable to consult, but it appears to have been full of typographical errors and to correct them the second edition was published.

The article in which the amended notice of *Pandion* appears is entitled: "Corrected Descriptions of five new species of birds from the Bahamas," the five being *Pandion ridgwayi*, *Rallus Coryi*, *Chamaeopelia Bahamensis*, *Ammodramus australis* and *Geothlypis restricta*. It appears, from an editorial notice (p. 70), that "owing to the numerous typographical errors in the description of new species of Bahama birds in the edition of January 15th, the reprint was deemed necessary. As will be evident from the description of *Pandion ridgwayi*, considerable rectification still remained to be done.

(To be Continued.)



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Comments.

NOMENCLATURE AT BERLIN.

As probably most of the readers of the OSPREY know, there has been recently a Zoological Congress at Berlin. As many may not know, the most prominent feature of the congress, and that which will influence more than any other the proceedings of working systematic zoologists, was a discussion of the subject of nomenclature and the action taken on it. All we know at present is that which is contained in the newspapers in the form of telegrams from Berlin. From them, we learn that the committee on nomenclature, appointed at the last congress, submitted a report on the subject on the 14th of August. Two distinct propositions were offered. One, chiefly from the French delegates, insisted on the importance of classical correctness of names and demanded that all should be made to conform with the principles of Latin grammar and should be etymologically correct; the other, supported by "the American delegates," contended that no changes should be made except in the case of obvious typographical errors, and that the

original names should be adopted without change and without regard to etymological propriety. There was a long and heated discussion of the question at issue and finally it was decided by a majority that Latin grammar should be applied and names corrected accordingly. It seems that when the question was put to vote, the Dutch and some of the German delegates sided with the Americans, while others of the Germans and the British went with the French. The Germans, it may be added, offered a compromise resolution but of what nature, we are not informed; the report is that it was not received with favor.

We must await the official or at least an authoritative report before we can appreciate the exact action or the merits of the decision reached. That the report is true in its main features we have reason to believe from our knowledge of the practice on the question involved, of the individuals who were in attendance at the congress. It is not at all likely that the defeated minority certainly not all — will submit to the decision of the tribunal thus pronounced. Probably the breach will be widened. When any one is at liberty to transform a name into one he deems better, or more conformable to linguistic elegance, a latitude is allowed whose bounds are very indefinite and concerning which a wide diversity of opinion may exist.

French naturalists, in times past at least, have been among the greatest sinners in infraction of laws of grammar and verbal composition. Conspicuous especially of the ornithologists were Lesson and Lafresnaye, and those were followed to a slight extent by Bonaparte, Swainson, Andrew Smith and others. The first two especially were addicted to a peculiarly vicious method, — compounding the first part or syllables of one word and the final elements of another; examples are *Embernagra* (= *Ember*[iza] and [Ta]nagra), *Pyrhulagra* (= *Pyrhul*[a] and [Tan]agra), *Cypsnagra* (= *Cyps*[elus] and [Ta]nagra), *Certhiavis* (= *Certhi*[a] and [Synall]avis), *Cinnycerthia* (= *Cinny*[ris] and *Certhia*), *Certhilauda* (= *Certhi*[a] and [A]lauda), *Pyrhulauda* (= *Pyrhu*[la] and [A]lauda), *Merulavis* (= *Meru*[la] and [Synal]lavis), and *Corvultur* (= *Corv*[us] and [V]ultur). We only give sufficient to afford an idea of the variety and method pursued.

But the monstrosity thus manifest is not the only objectional feature in some of the names. The additional gravamen of hybridity is involved in several of them. Thus *Emberiza* is

Latin and *Tanagra* intended to be the transliteration of a native name; *Pyrrhula* is of Greek origin and the erroneous *Tanagra* again comes in; the Greek *Cypselus* and the cacodonym *Tanagra* next come to view. Most of the others are as bad as these.

Again, what shall be done in the case of *Tanagra*? This name is the result of a misreading and partial inversion of a native Brazilian word - *Tangara*. Shall we reject it altogether? or, shall we alter the name to *Tangara*? or keep it as it is? The incorrect form has been almost universally adopted, even by the strongest advocates of classical procedure and so, in fact, have many others of the names quoted. But here we have barbarous names, hybrid names, monstrous names!

How shall such names be made to accord with

linguistic rules? Or shall they be superseded entirely by others? They are mostly tolerably euphonious and those whose sensibilities are not disturbed by appreciation of their etymological monstrosity will have no cause to find fault with them. "Where ignorance is bliss, 'tis folly to be wise." On the other hand, there are none who would not be offended by such compounds as *Emberizitanagra*, *Pyrrhulotanagra*, *Merulisyndalavis* or the like. If we accept the names as they were originally formed, we have euphonious (or at least not decidedly cacophonous) names and they are as good as meaningless or "nonsense" names. But are all meaningless or non-classical names to be abrogated? The prospect, then, is frightful! But we will wait to hear further before we complain more.

Notes.

THE ALBATROSS AND ITS ABSENCE OF FEAR. - By the time we had approached Tristan da Cunha three or four species of Albatross had congregated round the ship, as many as thirty birds settling on the water astern in a manner highly satisfactory for close and continuous observation. After half a gale of wind a lull not infrequently occurs, when the speed is reduced to two or three knots; then the hungry creatures literally clamor for food. Directly a bird intends to alight the legs appear straddling downward in ungainly fashion - a moment when even an Albatross looks like an illbalanced goose of unwieldy size. For half a minute it runs along the surface of the waves, treading water, so to speak, until the enormous wings become manageable. Then the bird swims with both wings thrown back, like a pair of lateen sails, a very Argonaut on the translucent sea. At length the difficulty is overcome, the wings are packed away, and - like a large gull - it rides the waves with consummate ease. Sometimes it paddles to and fro, or, again, it dives gracefully beneath the surface after squids or similar ocean dainties. Half a dozen birds, perhaps, gravely assemble to inspect an empty beer bottle thrown overboard, to bob up and down idly upon the waves, and inquisitive bills peck vigorously at the unsatisfactory flotsam, until a battle royal disperses the family party. The wiser ones meanwhile hover in midair, craning their necks to throw penetrating glances from a superior height.

With the birds settling by the dozen, it is easy enough to capture specimens for examination, without causing injury or pain. Any sharply barbed hook is altogether superfluous. The Albatrosses absolutely enjoy the excitement, and the sport obtained is not without a novel interest. A small metal frame should be made in the shape of a hollow triangle, attached to a hundred yards of stout line, and kept afloat by a good-sized piece of cork. The sides of the metal frame are then covered with bits of fat

pork, the hard skin of which is securely bound thereto; the bait is thrown astern, and the line is slowly paid out. Presently a great Albatross swoops through the air, impelled by curiosity to investigate the nature of the floating cork. It settles before the dainty morsel of food, numbers of birds follow suit, each one made bold by competition, and then the sport begins. At this moment additional line must be given in order to compensate for the progression of the ship, thus enabling the bird to seize the desired food. With a sudden rush the supreme effort is made. Once or twice the attempt proves ineffectual, but, rendered bold by greediness, a final grab finds the curved bill securely wedged inside the apex of the triangle, as the fierce tugs on the line quickly indicate. Steadily the haul is made, hand over hand, until a helpless Albatross is bodily lifted on to the poop in an absolutely uninjured condition. A slackened line enables the bird to escape, and if scattered wits permitted such an effort, sudden flight would also obtain release. The other birds invariably commence to attack a captured comrade, a steady pull being required, even if the line does cut your hands, to save it from its friends.

Once safely on deck, the mandibles are tied together, for otherwise the bird throws up an oily fluid, a disagreeable habit possessed by all the tribe. Subject to this precaution, it may wander gravely around to survey the new horizon of life. The large eyes gaze with truly pathetic confidence, expressive of anything but fear. It is a strange spectacle to witness the inquisitive bird solemnly waddle to and fro among the equally inquisitive human beings around. True, it objects slightly to the process of measurement, pecking sharply by way of protest, but a gentle box on the ear soon induces submission as the dimensions are rapidly noted, the Albatross meanwhile reposing affectionately in the arms of the second officer. The specimen happens to be a small one, but the wing expansion from tip to tip is no less than ten feet; the

extreme length of body is three feet six inches, and the formidable bill measures upward of four inches. Everything about the great wandering Albatross (*D. exulans*) is vast—the wings are enormous; the flight is reckoned by the thousand miles, and its very nest may be found within the extinct crater on the adjacent island of Tristan da Cunha—7,000 feet above the sea level. The plumage varies greatly on different specimens and at different seasons; young ones, like our friend under observation, having a mottled brown appearance. The bill has a rosy tinge at the base of the mandibles, passing into horn color at the tip of the curve of the culmen. The head, neck and body, together with the breast, are principally white; the mantle has beautiful pencilings of black. The wings are brown above and white underneath, tipped above and below with black—an invariable character of the great Albatross. The tail is chiefly white, relieved by blotches of black, which give the appearance of a black bar edging the white coverts. The legs, feet and toes have a peculiar bluish gray, with a suspicion of a livid pinkish hue somewhat difficult to define. The black pupils are bordered with green. I found eleven feet six inches to be the average wing measurement, although a gigantic specimen in the Sydney Museum extends seventeen feet six inches with a bill six inches long. All sailors are familiar with the great wandering Albatross in its varying plumage. While the young and even the second year birds possess every variety of brown coloration, the really mature specimens—especially round the Horn—are nearly pure white, with the black tips above and below. Most of the other species are hopelessly confused by sailors under the general term "molly-mauk" (a word spelled in divers ways), and it took me many weeks to distinguish the different kinds.—*Exchange*.

OSPREY NOTES. Since the notes on the OSPREY are about to come to a close and nothing appears to have been said as to differences in habits manifested between inland and coast birds, I will add a few remarks based upon personal experience.

The Osprey is not a rare bird in the Mississippi Valley, and I have had many opportunities to observe it there, more particularly near Burlington, Iowa.

The inland bird in its flight suggests that of the Turkey Buzzard. It is extremely graceful, dignified and deliberate—a sailing flight—a gliding through the air with but very little beating of the wing, while our coast birds, at least those which I have observed on the Lower Potomac and the Chesapeake Bay, seem of an extremely nervous temperament; the flight suggests that of the Fish Crow rather than that of the inland Osprey. Here the birds may be seen restlessly beating back and forth over some shoal, hovering now and then before taking a plunge for prey, but all the while violently exercising their wings, sailing only as they take a short turn to resume their hunt. The shallows

or shoals seem to be their favored fishing grounds.

We can readily understand that the fish must approach nearer the surface and hence be more easily accessible to the birds than in deeper water, which would explain this preference. I have seen no less than seven Ospreys restlessly beating back and forth over a single shoal in the month of August on the Lower Potomac at one time. They fly with steady stroke a short distance (perhaps 6 to 30 feet) above the surface, and stop short when some suitable object for attack is discerned, pausing, for a moment, then extending the feet out from the body and forward, with a few strokes of the wings which are extended far back, they take the plunge, flying to shore with the prey if successful or else continuing their restless search.

What a different picture does our inland bird present! As he passes from one lake to another, not restless, nervous, anxious like its coastal brother, but quiet, a picture of sublime serenity. Many a time, when bent upon similar pursuits, have I seen the bird come lightly, gracefully floating over the timber from an adjoining lake, sailing down upon and by me and, on several occasions, I have even been permitted to watch this plunge at less than a stone's throw from my post. A swift swish, a few short strokes with wings thrown far back and extended talons, a splash, circles of waves, a minute's pause, a pair of beating wings, a shower of spray, and the Osprey was again rising with steady stroke to gain an elevation, pausing every now and then as it were, to send a shiver over its wings and body to part with the last drop of moisture still clinging to its dress. Frame this scene, with a back ground of virgin forest and the slowly ebbing ripple where the Osprey broke the crystal lake, and you have a picture of our inland bird.

No differences have, as far as known, been detected between the two individuals, and yet one would expect that such marked contrasts in habits might leave an impress upon the structural characters.—**BARTSCH**.

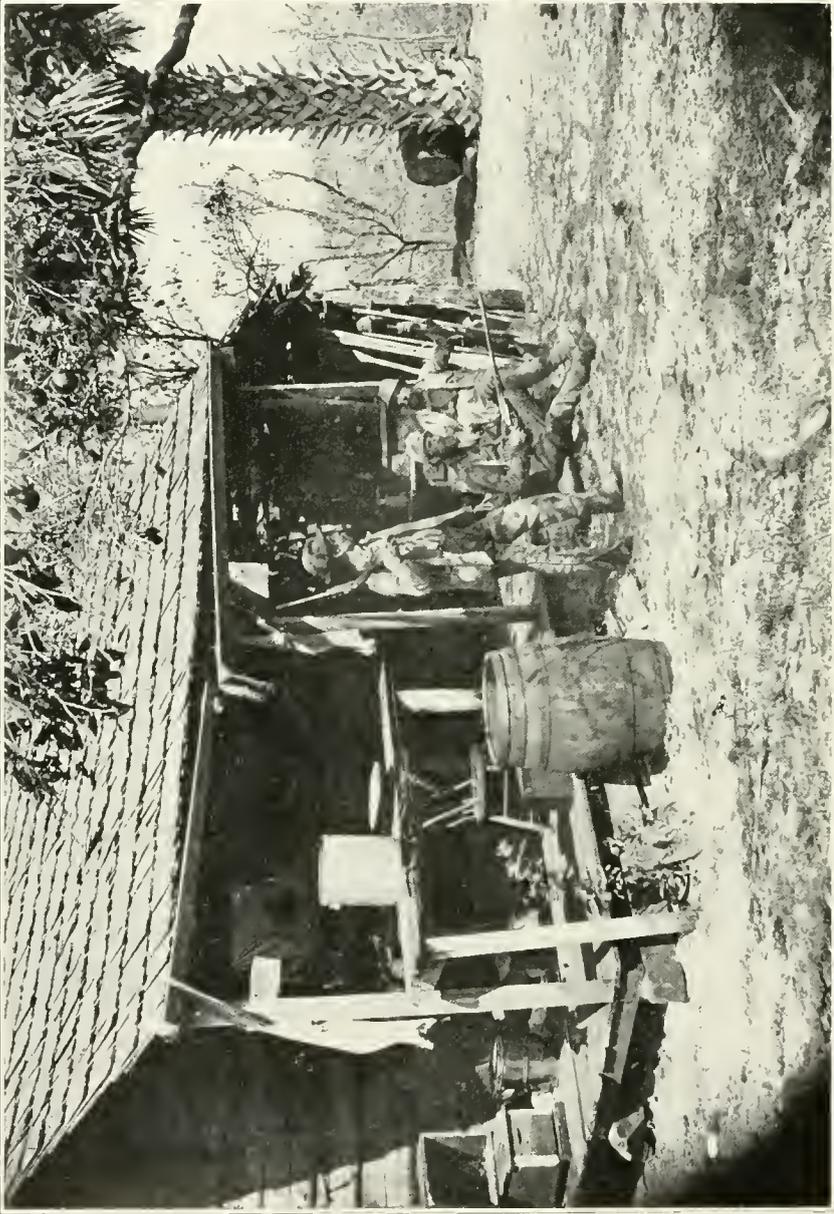
A CURIOSITY. The following note has come to our hands. We believe that it will interest many of our readers and publish it here verbatim and literatim.

"Sir I have a fowl it is half giney half chicken it is a crost between a chicken ruster and a giney hen it is two years old and is harty and spry it wate is a bout 5 lbs it is a cream colar With Giney fethers mixed thru it its fithers is very long it is a show it Self they haat any thing on the globe like it if you Want it I Will Send it pota to you this is no humbug it is facts I would not Send you something and ly about it What I write is facts let me no What you Will give for it.

"Yours truly,

* * * *

W. Va."



THE STARTING POINT.

ROBERT RIDGWAY (STANDING).
E. J. BROWN (IN MIDDLE).
WILLIAM PALMER (SITTING ON FLOOR).

Digg's House, Orange Hammock, Kissimmee River, Florida.

The Florida Cardinal and the Florida Wren were in the habit of breeding yearly under the roof of this porch

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Original and Selected Articles.

SOME BIRDS OF THE KISSIMMEE VALLEY, FLORIDA.

BY WILLIAM PALMER, Washington, D. C.

Observations of the following birds were made during a month spent in Florida, in February and March, 1895, in company with my friends, Mr. Robert Ridgway and Mr. E. J. Brown. We had intended to take a steamer down the Kissimmee River, but were compelled to hire a sailboat to go as far as the middle of Lake Kissimmee from which we footed it some twenty-five miles further south, our baggage going on a wagon. Our destination was Orange Hammock on the Kissimmee River a few miles above Fort Kissimmee. Here we camped for 22 days on the place of Mr. J. W. Driggs, a former Alligator hunter who at one time had collected specimens of birds.

Sky, water, prairie, pines, sand, palmettoes, flatness, are common in this region; all else are occasional and scarce and simply serve to make a slight change in the landscape. We were unfortunate as to the time of our trip for the two great frosts of that year occurring just previous to our visit had largely destroyed the tender vegetation and especially the flowers and oranges, and had undoubtedly affected the bird-life.

The word 'Hammock' is used in the Kissimmee Valley to designate two very dissimilar places. The ordinary use is intended for those places of irregular size and shape which are merely of a little higher elevation than the level of the surrounding country and densely covered with a growth of plants, principally live oaks and bushes. The clearing of these places and the planting of orange and other fruit trees together with the building of a sometimes somewhat indifferent house, have resulted in the nearest approach to civilization that the country affords. The other kind of Hammock has had an entirely different origin and calls for a more extended notice, especially as they are the homes of various species of birds not usually found in the other.

On the prairies, in the pine woods, along the edges of the swamps and never on the large 'Hammocks' already described, are many circular depressions of varying depths and diameters, usually not more than ten feet deep, and

from thirty feet to a quarter of a mile in extent. The most numerous are perhaps a hundred feet or so across. Sometimes these occur singly, then again several exist close together rarely; two or three unite or nearly join, in fact; they occur entirely at random, but never in the swamps as far as I know, and not usually in the pine woods. I often speculated as to the origin of these depressions, but with no result until I became aware of the character of the substrata. The explanations I have to offer are based on my experiences, and may or may not be correct; at any rate they seem to fit the case. The loose surface sand of the Kissimmee Valley region, which is almost its only soil, is from two to six or eight feet deep and rests on a comparatively thin stratum of a soft brown sandy clay 'rock', a rock only in name, but designated so in the country. In places bog iron exists on the surface of this so-called rock which is thus hardened, and where it is exposed on the surface it also becomes hardened by the weather. The accumulated rains, often abundant and covering miles, soften this layer of clay rock and percolate through in many places, causing small channels through which the fine sand of the surface is carried, resulting in surface depressions or sinks varying in size according to the character of the channel in the clay. These sinks are always full of water during the rainy season, but are often dry or contain but little water in the winter. The second class of 'Hammocks' are formed in the following way from these 'sinks'. Particles of vegetable matter are carried to the centers and choke up the channels, and eventually form slight mounds in which seeds of various trees germinate and grow during some favorable season. Thus we find depressions containing varying depths of water and containing one or more cypress trees always in or about the center with deeper water surrounding them. As the central mound of such depressions increases in size and height, gum trees gradually take the place of the cypress to the exclusion of all other trees. But in some, especially the larger sinks with a larger and higher central mound, many species of trees,

shrubs and low plants combine to form a thick, almost impenetrable mass, and thus where these occur in the pine woods we have the 'Bays' of the country. Many of the shallower sinks are entirely filled with cypresses, often large, usually uniform in size. In many, the cypress and gum trees have entirely disappeared, the central mound has nearly filled the depression, and the center is even higher than the surrounding prairie. Live oaks, bogs and cabbage palmettos have taken possession, and thus we have 'Hammocks' always circular and usually disassociated from other groups of trees. Many of these depressions never contain trees, merely water, while others have the center entirely filled with sawgrass and a few bushes. In some, masses of grass may occupy various places. A few may contain a single tall tree; a few bushy trees will surround this, then saw palmettos will form an impenetrable mass twenty to forty feet wide entirely around, and a ring of water thirty or more feet across with a border of short grass, and then the saw palmetto of the prairie surrounding the whole. No two are exactly alike, but every stage of the evolution can be found. They form ponds or islands in the open landscape or in the pine woods, and were solitary or numerous in a small area.

Many of these larger sinks which remain wet almost the entire year are really cypress swamps, this species filling them to the exclusion of other species whenever low wet areas exist, especially along the shores of the lakes, but they are unknown along the entire course of the Kissimmee River, doubtless owing to the great difference between high and low water and its rapidity.

Considerable of the land lying back from the river, but approaching it in various places, is covered with a scattered growth of large pines.

The numerous fires made by the people to compel the growth of fresh green grass for cattle have resulted not only in preventing much of the growth of young pines, but have also killed out many of the larger and smallest so that they are much scattered, and there is practically no shade beneath.

The Kissimmee is a swift, but extremely tortuous river, and frequently doubles on itself. Thus in many places it is necessary to follow the course of the river for ten miles to make a progress of two. The letter **S** fails entirely to give any idea of this exceedingly crooked stream. The river is bordered on both sides with a fringe of dwarf willows, many bushes and many herbage plants, which often form a mass too difficult for a boat to penetrate, except at very high water. Many open places of irregular size and shape open into the river or border the prairies and often form cutoffs for boats. Rarely does the prairie ground form a river-bank.

Between the edge of the river water and the dry prairies is an extensive area, usually only a few hundred yards wide, of wet grassy land on which Killdeer, Jacksnipe and other waders were often abundant, and in the almost plant filled borders of the river and in the open places, Coots and Green-winged Teal were common together with a fair sprinkling of Louisiana

Hérons, White Ibises, Florida Ducks and other species. Back of this wet grassy area, the prairie begins, at first a few outlying islands of saw palmettos, then a dense grassy palmetto area stretching in places as far as the eye can see, and irregularly bordered by a sudden growth of tall pines. Almost impassable sloughs wind for miles into the pine lands. The distribution of the birds over these areas is by no means the same. Most of the birds remain in the swamps of the river, but a few scatter through the country, especially the Blackbirds and small Herons, Meadow Larks, Flickers and Mourning Doves are abundant about the edges of the pines, and a few Bluebirds, Jays, Shrikes and Hawks are easily found.

Red Poll and Myrtle Warblers were abundant about the open bushy ground together with numerous Robins. An occasional covey of Quail was flushed. In the Hammocks, occurred many of the land birds I have mentioned with Florida Wrens, the Southern Yellow-throat, the so-called White-eyed Chewink (which has not a white eye), the Florida Barred Owl, Red-shouldered Hawks, Red-bellied Woodpeckers and several species of warblers. The Bluebird was confined entirely to open place in the pines, especially near a pond. Taken altogether and deducting from the list Ibises, Blackbirds, Louisiana Herons, Robins, Red Poll Warblers, Myrtle Warblers, Savanna Sparrows, Coots, Blue-winged Teal, Jacksnipes, Meadow Larks, Robins and Doves, all other birds were scarce and one had to work hard to get a bag full. In all 112 species were seen of which I saw 38 for the first time alive. We left the town of Kissimmee on February 25, and returned on March 24.

1. **PIED-BILLED GREBE.** (*Podilymbus podiceps*).

Seen occasionally; one shot.

2. **SNAKE BIRD.** (*Anhinga anhinga*).

Rarely seen; single birds. Saw about twenty, but two of them on the water.

3. **FLORIDA CORMORANT.** (*Phalacrocorax dilophus floridanus*).

Few seen on the lakes, rarer on the river.

4. **FLORIDA BLACK DUCK.** (*Anas fulvigula*). Common on the Kissimmee and usually in pairs; shy and difficult to shoot.

5. **AMERICAN WIDGEON.** (*Marca americana*).

A few seen and one shot.

6. **BLUE-WINGED TEAL.** (*Querquedula discors*).

Abundant on the river, usually in flocks of less than ten. On March 23, numerous, in large flocks on the upper part of the river near the lake. A male collected March 3, has a large triangular white spot in the center of the underbody. Usually found feeding in the shallow open water along shore.

7. **WHITE IBIS.** (*Guara alba*).

Abundant, often seen in large flocks while flying to and from their roosting places. Occasionally in the middle of a bright day large flocks would circle upwards to a great height until it was difficult to distinguish single birds. Such flocks were composed of old birds; in only one instance did I see a dark immature bird with

them. While flying to and from the roost the adult and immature birds remained separate. An adult male measured from tip of bill to end of tail 26.75 inches, and spread 42 inches, while an immature male was just one inch longer and half an inch more between tips of expanded wings.

While standing by the riverside one day I saw a line of these birds down the river. Instantly I thought of the gun, but it was too far to fetch in time; then the camera was thought of, but it could not be used for the same reason, consequently I could do nothing but watch. It was a most beautiful sight to see a line of these pure white birds stretching in a slightly wavy line entirely across the river, some seventy yards, and swooping down on one, and not six feet above the water. As it was useless to do anything else I stood perfectly motionless in full view, and the line of beautiful birds passed directly in front of me, the nearest not five feet away. Most of the birds never noticed me, but the three or four nearest, especially the end one, seemed a little suspicious, for they turned their heads slightly and examined me as they passed. It was the moment of a lifetime, and I never more regretted that my gun was far away tho' I wished almost as much that I had a camera; if I had, however, my movements would probably have caused them to swerve off long before they reached me.

8. WOOD IBIS. (*Tantalus loculator*).

About seven birds seen, all flying.

9. AMERICAN BITERN. (*Bolaurus lentiginosus*).

Seldom seen; but often heard "booming" during the latter part of our stay.

10. GREAT WHITE HERON. (*Ardea occidentalis*).

Several seen in Cypress Lake on February 26.

11. WARD'S HERON. (*Ardea wardi*).

A few seen at intervals.

12. EGRETT. (*Ardea egretta*).

A colony was noticed at one place, and scattered individuals were seen usually about the ponds on the Osceola side of the river.

13. SNOWY EGRETT. (*Grazetta candidissima*).

One certainly identified, came several times to a small pond in the pines near Lake Kissimmee.

14. REDDISH EGRETT. (*Dichromanassa rufescens*).

Several seen nearly every day while about the river, usually in pairs.

15. LOUISIANA HERON. (*Hydranassa tricolor ruficollis*).

The most common Heron. Specimens taken as late as March 20, though laying or about to lay, were not in full plumage. While creeping on some ducks that were in the shallow water adjoining a prairie, I noticed several of these Herons that were watching my movements. They stood in the water perfectly erect with the bill pointed skyward and I could distinctly see the movements of their eyeballs as they watched me, their body being perfectly motionless. They evidently thought themselves unseen or were deeply attracted by the peculiar creeping thing.

(To be Continued.)

A VISIT TO OTTER ROCK, PACIFIC OCEAN.

"Among the Sea Birds".

BY A. G. PRILL, M. D., Scio, Oregon.

Otter Rock is a barren rock about thirteen miles north of Newport, Oregon, and about a mile and a half at sea opposite Cape Foulweather. The entire area of this rock is perhaps half an acre and, as will be seen by the accompanying photograph, consists of a high almost perpendicular rock, and a lower or flat portion which is covered at high tide. The higher part is perhaps one hundred to one hundred and fifty feet high, rising on nearly all sides perpendicularly from the ocean. This rock is the breeding place of many sea birds and it is of a visit to this place in quest of specimens that I am about to relate.

On June 27, 1899, in company with Doctor Hill of Albany, I reached Newport and during the evening we made a small collection of starfish which are very numerous there. Strolling up the beach we watched the many hundreds of Sea Gulls and other sea birds. That evening we engaged a man to take us to the light house, a distance of five miles, the following morning. So on Wednesday morning we were astrir early and soon arrived at Yaguina head-light house. Here we had the pleasure of meeting B. J. Bretherton, First Assistant, a naturalist

through and through to whose kindness and daring, I am indebted for the specimens we secured.

Near the light house, on perpendicular walls of rock, many Violet-green Cormorants nested. As we were desirous of securing eggs of these birds, Mr. Bretherton would not consent to our leaving until supplied. So starting out with one hundred feet of good rope, we soon reached the cliffs, and friend Bretherton was lowered over them, suspended in mid air between ocean and sky. Five sets of eggs of the Violet-green Cormorant were secured after several descents. Three sets contained four eggs each, and two sets three. Their color is dirty white with a slight greenish tinge, and they are covered with a chalky deposit. The eggs are slightly more pointed at one end than the other. The size which is a fair average, of set $\frac{1}{4}$ is as follows: 2.24 x 1.48; 2.08 x 1.36; 2.28 x 1.44; 2.11 x 1.37.

Returning to the light house, we made arrangements to visit Otter Rock on the following day, and again secured the valuable assistance of Mr. Bretherton for the proposed trip. We went back to Newport well pleased with our day's work, and engaged three expert seamen

to take us out to the Rock by boat. The following morning we drove twelve miles up the beach where our boat was to meet us, and soon we were all aboard and off for the rock.

Landing on the rock is hazardous, especially for those who are not accustomed to such work, but it was successfully made and one of the seamen took the boat out and away from the rock to keep it from being battered to pieces. Thousands of Gulls, Terns, Tufted Puffins and Cormorants filled the air as we approached and landed, and soon, after a tortuous climb, we found ourselves on the summit of Otter Rock. There the rocks were covered in places with sea weed, and we found slight depressions showing where many nests had been but were then vacant. Many young Gulls, only a few days

often beyond the reach, and in places where it is impossible to get. The eggs are plain dirty white, and measure 2.86 x 1.90.

The Violet-green Cormorant nested on the sides of the perpendicular rock, on projecting shelves just wide enough to hold some weeds, grass and the eggs. As Mr. Bretherton desired a few sets of the eggs, he was again lowered, and secured two sets; one of five eggs, an unusually large set, and one of four eggs. While he was making the descent, I took the photo, in which you see him about twenty-five feet down and reaching for a set.

The Pigeon Guillemot and Oyster Catcher also nest there but no eggs of these birds were secured on Otter Rock, although on the homeward trip the seaman secured a single egg of the



COLLECTING EGGS OF THE VIOLET-GREEN CORMORANT. OTTER ROCK.

old, were found, as well as many sets of three eggs in which incubation was far advanced. The Western Gull and Glaucous Winged Gull breed there; their nests are simple depressions in the sea weeds in which their three eggs are deposited. The average size of a set of the former is 2.55 x 1.86 and they are of a light grayish olive ground color, blotched and speckled with dark and light shades of brown and lilac, some of the spots appearing to be beneath the surface.

The odd and grotesque appearing Tufted Puffin or Sea Parrot breeds on Otter Rock and although we saw many of the birds, only one set, which consisted of a single egg, was taken. These birds nest in the deep crevices of the rock,

latter for me. The color of the egg was drab, blotched and speckled, chiefly at the larger end, with dark brown. The egg was only slightly narrowed to a smaller point at one end, and its measurements were 2.20 x 1.42. Time was fast flying and the roar of the incoming tide warned us that we must leave, so climbing down to the lower portion of the rock, we were soon aboard the boat with our specimens which, although few in number, were highly prized because of the effort it cost to secure them. I succeeded in getting several fine specimens each of the Gulls, Oyster Catchers, Murre, Puffins, Murrelets and, Cormorants, and have them mounted in my collection.

NOTES ON THE BLUE GROSBEAK, *GUIRACA COERULEA*.

By JOHN W. DANIEL, JR., Lynchburg, Va.

In Virginia, the Blue Grosbeak is a species widely distributed, occurring coastwise and in the mountainous portions as well as throughout the Piedmont region, although it does not appear to be a very abundant bird in any portion of the state. Dr. W. C. Rives has found it to be a fairly abundant summer resident in Eastern Virginia, and has found its nest and eggs in Albemarle County.

I have observed it during the summer, in Fauquier, Alleghany, Rockbridge and Campbell Counties, which are widely separated and likewise different as regards temperature. In Campbell County, the birds arrive from the south late in April, but nest building does not commence earlier than the first week of June. During the interim, the birds are usually to be found in pairs in the neighborhood of the intended breeding locality. The species shows a marked dis-

but whether they serve such a purpose is a matter of much doubt. Shrivelled and shapeless as a skin invariably is, it bears but slight resemblance to a snake, and it would require a very discerning Chipmunk or Blue Jay to make head or tail out of it; yet nearly every nest contains it as though it rendered important service.

During the first week in May, 1901, I met with several Blue Grosbeaks near Lynchburg, Va., where the bird is a fairly abundant summer resident.

On May 5th. I shot a male Grosbeak, and as I only slightly wounded it in the wing I took it home. After a couple of weeks of nursing and feeding the bird was released, but not before I had attempted to photograph it. After several failures, I secured the picture which accompanies this article. The bird was placed upon a well-leaved branch of a shrub and focused upon.



THE BLUE GROSBEAK.

position to return to the same locality, in successive years, to nest. Peach orchards are favorite nesting haunts, the nest as a rule being placed among the upright sprigs of a young tree. Old fields with scattering growth of sassafras (*Sassafras officinale*) are frequently selected, as the latter shrub seems to be in high favor with the species, and the greater per cent of the nests I have observed have been placed in it.

During the breeding period, it is usual to find the birds in isolated pairs; they do not appear to be sociable birds. As in the case of the Crested Flycatcher (*Myiarchus crinitus*), cast-off snake skins enter as a queer feature of the nest composition. They are probably used with the instinctive purpose of frightening intruders.

When the proper focus had been secured, I found the bird had closed its eyes and gone to sleep. When I attempted to arouse him, he at once left the branch for the ground and skurried away amongst the high grass. After a lively chase I got him once more, and posed him. Just previous to pressing the bulb, I attempted an imitation of the call note the species utters. The bird became animated and the bulb was pressed in time to catch the animated expression as shown in the picture. Later the bird was released.

During the early part of September, Blue Grosbeaks frequent the ravines grown up with bushes, and feed upon various kinds of weed seeds. They depart for the south about the last week of September.

WILLIAM SWAINSON AND HIS TIMES.—X.

BY THEODORE GILL, Washington, D. C.

(Continued from Vol. V, page 72.)

In 1832 Swainson had correspondence with Charles L. Bonaparte, Prince of Masignano and Canino then resident at Rome, relative to drawing plates for the latter's work. Bonaparte, in a letter of 6th April, 1832, agreed to Swainson's charge, three guineas a plate. Bonaparte also agreed to bring a copy of the bird volume of the *Fauna Boreali-Americana*.

THE CABINET CYCLOPEDIA.

We must now pass on to the work which occupied the last years of Swainson's life in Britain and which gave him the greater part of his living. This was the preparation of the series of volumes for which he had contracted with the great firm of Longmans & Co., of London, to furnish for "The Cabinet Cyclopædia" edited by the Rev. Dionysius Lardner.

The editor of the "Cabinet Cyclopædia," Dr. Dionysius Lardner, a celebrated character of the time, "had resolved to engage a party of naturalists to execute the zoological series; and a long list of names had been given him, many of the highest repute, who were to take the several portions." Swainson has not named any of these, but from another source we may learn who they were.

A list of 32 gentlemen who had promised to contribute to the Cabinet Cyclopædia was given in an announcement by Longman & Co., in the *Literary Gazette* for November 7, 1829, (p. 734). The "party of naturalists to execute the zoological series" included nine gentlemen; their spheres were not stated, but guesses as to what they might have written about are indicated within parentheses. The nine were Thos. Bell (Reptiles?), Edw. Turner Bennett (Mammals?), Rev. Jno. Fleming (Philosophy of Zoology?), J. G. Children (Insects, etc.?), T. Horsfield (Birds?), Wm. Sharp MacLeay (Insects?), Geo. B. Sowerby (Molluscs?), N. A. Vigors (Birds), and and Wm. Yarrell (Fishes).

Swainson fancied that "the unfriendly feeling entertained towards [him] by an individual, whom the editor empowered to organise this undertaking, was . . . the reason why [his] assistance was never asked. Promises, indeed, were continually made to the editor that some of these volumes would be 'soon' ready; but after waiting near three years, not even one was forthcoming. Finding, therefore, that, from some unexplained cause, nothing was produced from this imposing array of great names, recourse was had to the only naturalist of the least repute, whose services had not been thought worth securing. To make 'a long story short', a proposition was made to [him], that the *Encyclopædia of Zoology* should be remodelled and transformed into the *Cabinet of Natural History*." He "foresaw that this would almost impose on [him] the necessity of rewriting the whole work; but felt flattered in being thought equal to the task," and "the agreement was therefore concluded".

The first of the volumes published in the series was the introductory one which appeared in 1834 and was entitled "A Preliminary Discourse on the Study of Natural History". Although there is much of interest in it we must pass it by.

The first was soon followed by a second volume published in 1835; it was "A Treatise on the Geography and Classification of Animals".

THE CIRCULAR THEORY.

In this he gave an elaborate exposition of his views of classification and of his modification of the "circular theory of MacLeay. An outline of Swainson's views on his first "adoption of quinarianism" and then published in 1824 has already been given (*OSPREY*, vol. 4, p. 167). His latest and most authoritative statement is to be found in "A Treatise on the Geography and Classification of Animals" published in 1835. His ideas were so strange that fear of a charge of misrepresentation will render expedient a summary in his own language.

He entered upon a superficial historical survey of Zoology and gave a more detailed sketch of the classification on circular and quinary principles proposed by William Sharp MacLeay in his "*Horæ Entomologicae*" published in 1821. After this review he enunciates the following conclusions (p. 212).

"On a careful consideration, therefore, of the principles of natural arrangement developed by our author, they may be all comprised under one or other of the following:—1. The demonstration of the circular nature of affinities in natural groups; 2. The component parts of every group being regulated, in their variation, by some definite number; and, 3. The system of representation, by which the contents of one natural group are represented analogically by the contents of other groups. This last law, indeed, was not suspected to be universal; but merely confined to one in every fifth group. The theory of analogy and affinity comes also under this latter head; being in fact, one of the tests or proofs to be applied. Such are the fundamental principles of classification contained in the *Horæ Entomologica*; the modifications which they subsequently received from its author, will be presently stated".

He first presents his modification of the circular theory and his own peculiar views in the following statement (p. 224).

"In submitting to the zoological world—for the first time in a connected form the result of our researches on the first principles of the NATURAL SYSTEM, it seems the most simple and preferable method to state them, as heretofore*, in the form of distinct propositions, which we shall endeavour to substantiate by subsequent details.

*See *Fauna Boreali-Americana* (Northern Zoology), vol. ii, pref. p. 48.

- "I. That every natural series of beings, in its progress from a given point, either actually returns, or evinces a tendency to return, again to that point, thereby forming a circle.
- "II. The primary circular divisions of every group are three actually, or five apparently.
- "III. The contents of such a circular group are symbolically (or analogically) represented by the contents of all other circles in the animal kingdom.
- "IV. That these primary divisions of every group are characterised by definite peculiarities of form, structure, and economy, which, under diversified modifications, are uniform throughout the animal kingdom, and are therefore to be regarded as the PRIMARY TYPES OF NATURE.
- "V. That the different ranks or degrees of circular groups exhibited in the animal kingdom are NINE in number, each being involved within the other".

He then proceeds to give an attempted full exposition and demonstration of these five propositions in regular order.

First, he endeavors to give an idea of what he means by what he calls a "Natural", otherwise "Circular" assemblage of animals (p. 225).

"The progression of affinity in any assemblage of animals is known to be natural, if it is circular. This is shown when, by beginning at some one point of the series, and following closely the line of affinity, we are imperceptibly conducted to that point again. The two extremities of the series will thus obviously be united; and this union, of course, gives us the figure of a circle. Between the two points, thus blending into each other, a greater or lesser number of modifications of form, in the intervening animals, will occur, depending entirely on the greater or lesser extent of the circle we are tracing. These deviations, however (as will be hereafter shown), are all upon a uniform plan; and, besides, in all cases, are *secondary*, or inferior, to the leading characters of the whole assemblage, which in one way or another—they all retain. Such a circle is called a natural group: the whole group being employed, on this occasion, to designate, indiscriminately, every series or assemblage of beings, whose affinities have been so made out. When such a series is so gradually developed that no link in the chain of continuity appears wanting, it is then termed a *perfect* group. But when a part of the series is perfect, and the other part presents the idea of a chain where several of the links are wanting, then the group is called *imperfect*".

Second, he takes up the question of Number and urges that Three is the predominant number, and that the subdivision of one of the three into three minor circles is the basis of MacLeay's conception of five as the regnant number (p. 226).

"As it is manifest that every group, according to its magnitude, will exhibit more or less variety in its contents, the first question which suggests itself is, Are these variations regu-

lated by any definite number? And is that number so constant, in all such groups as have been properly investigated, as to sanction the belief that it is universal? The answer is in the affirmative. Every group, whatever may be its rank or value, (that is, its size or its denomination,) contains, according to our theory, *three* other primary groups, whose affinities are also circular. One of these is called the *typical*, the other the *sub-typical*, and the third the *aberrant* group. This latter is so much more diversified in its contents (for reasons hereafter to be stated) than the other two, that many naturalists reckon *five* groups in all; the number *five* being made out by dividing the aberrant group into *three*, instead of considering it as only *one*".

Third, he enters on a consideration of the degrees or kinds of resemblance and the supposed difference between what he calls Affinity and Analogy (p. 230).

"There are, in nature, two sorts of resemblances, which are termed *analogy* and *affinity*. We have so fully explained these relations in our preliminary volume*, that it is only in consequence of our wish to exhibit in a connected series all the laws of natural arrangement yet discovered, that we now repeat, in some measure, the substance of what has already been stated.

"The most ordinary observer perceives, that every created being has different degrees of relationship or of resemblance to others. Where this is immediate, it is termed an *affinity*; where, on the other hand, it is remote, it is a relation of *analogy*."†

"The theoretic distinction between affinity and analogy, in a more scientific point of view, has been thus stated by the naturalist who first gave a definite meaning to the terms: "Suppose the existence of two parallel series of animals, the corresponding points of which agree in some one or two remarkable particulars of structure. Suppose, also, that the general conformation of the animals in each series passes so gradually from one species to the other, as to render any interruption of their transition almost imperceptible. We shall thus have two very different relations, which must have required an almost infinite degree of design before they could have been made exactly to harmonize with each other. When, therefore, two such parallel series can be shown, in nature, to have each their general change of form gradual, or, in other words, their relations of affinity uninterrupted by any thing known—when, moreover, the corresponding points in these two series agree in some one or two remarkable circumstances, there is every probability of our arrangement being correct. It is quite inconceivable that the utmost human ingenuity could make these two kinds of relation tally with each other, had they not been so designed in the creation.

(To be Continued.)

*Preliminary Discourse on Nat. Hist.

†There cannot be a better proof of the low ebb to which the higher departments of zoology have sunk and the ignorance of those persons who are engaged to write reviews of scientific works for the daily press, than the fact of one of those eritics, who undertook to censure our former volume, being totally unacquainted with the difference between *analogy* and *affinity*! To him, it seems, they are only synonymous with "resemblances," and such "resemblances" forsooth, are to be ridiculed!

THE CAGE-BIRDS OF CALCUTTA.—II.

By F. FINN, Deputy Superintendent, Indian Museum, Calcutta.

FAMILY EULABETIDÆ.

The common Hill-or Talking-Mynah (*Eulabes intermedia*) is one of the best-known cage-birds in Calcutta, being brought into the Bazaar by scores at a time, which include both adult and newly-fledged specimens. As everyone knows, some of these birds are very fine talkers, but I have only heard one that was really good, whose imitation of the human voice was perfect. They often prove but short-lived pets, and I am inclined to think that the "sadoo"-diet is too rich for these fruit-eating birds, as they usually seem to die in fits, and those I have handled have been very plump and heavy and were probably unduly fat. Recently I saw one with a nearly white iris, the only such specimen I have ever observed among a great number of individuals from India and the Andamans. The smaller Talking-Mynah (*E. religiosa*) is not often caged here, and I have seen no other bird of this family in captivity.

FAMILY STURNIDÆ.

As might be expected where the family is so well represented, the various Starlings and Mynahs are often seen caged. Much the commonest of them is the ordinary *Acridotheres tristis*, which is even more commonly kept than *Eulabes intermedia*, and sometimes talks nearly or quite as well. It also becomes so tame that it may be allowed full liberty. I have seen several more or less perfect albinos of this species in confinement; two very curious specimens are at present in the Calcutta Zoological Garden, for which I procured them from Mr. Rutledge. Both were white when he first obtained them, but one has now completely assumed the normal coloration of the species, and the other has partly done so. A similar phenomenon occurred with a common Babbler (*Crateropus caururus*) recently in his possession, which unfortunately escaped.

Another common Starling (*Sturnopastor contra*) is frequently seen caged, and from its very sweet liquid notes is certainly better suited than any other of its family for a pet. It does not appear to have been noticed that the coloration of the soft parts of the young of this species is quite different from that of the adult, the bill and legs being black, with the inside of the former orange, while in old birds the legs are white and the bill orange and white, with the inside of the mouth black.

All the other common Indian Starlings may be seen at times caged in Calcutta namely: *Acridotheres ginginianus*, *Elthiopsar fuscus*, *Sturnus menzbieri*, *Pastor roseus*, *Temenuchus pagodarum* and *Sturnia molabarica*. The last two are known as *Pawi*, and this title is shared by *Sturnia andamanensis*, which is occasionally imported and is called "Sada Pawi," Sada meaning "white." *Graculipica nigricollis* is also brought in small numbers from China. The male is a most amusing bird, with his habit of

erecting his crest and bowing and muttering to visitors.

FAMILY MUSCICAPIDÆ.

The only Flycatchers I have seen in captivity here are *Stoparola melanops* and *Niltava sundara*, of which a few have been brought down from the North and have thriven very well on the sadoo-and-maggot regime.

FAMILY TURPIDÆ.

As in other countries, the birds of this family are popular captives here. In fact, if a census of cage-birds of Calcutta were taken, I should expect the Shama (*Cittocincla macrura*) to come very near the head of the list, as it is extensively kept, and thoroughly deserves its popularity on account of its splendid song. Indeed, after the common Green Parrot, it might, I think, be called the characteristic cage-bird here. Many individuals are also sent to Europe where the species is yearly becoming better appreciated. Both wild-caught birds and hand-reared fledglings, still in the mottled plumage of immaturity, appear in the shops of the dealers, while the great majority of the birds exposed for sale are males. A few females may, however, be seen, being presumably hand-reared birds, whose sex could not be determined at first. These have given me the opportunity of observing that this favourite songster is a most pugnacious bird; the cocks will at once fight if put together, and so will the hens. At the same time, old wild-caught cocks and young spotted birds arrive, in many cases at least, in cages containing half a dozen or more, though Shammas are more usually brought in long wicker-cages divided by bars into separate partitions for the several inmates.

Other small Turvidæ not uncommonly kept are the "Dhyal" (*Copsychus saularis*) and the "Pidha" (*Pralincola caprata*). *Chimarrhornis leucocephala* is also occasionally brought down from the hills in the winter. The "Bulbul bostha," or true Eastern Nightingale (*Daulias golzi*), is sparingly imported at this season, the birds fetching high prices—from fifty to two hundred rupees. I am told that a man will come all the way from Cabul with a few of these much-esteemed birds as his main venture.

Of the large Indian Turvidæ the only species at all frequent in captivity here are the "Kastura" (*Turdus bouthoul*) and the "Dama" (*Geocichla citrina*), and I have not seen many even of these. A few English Song-Thrushes (*Turdus musicus*) have been imported, and do fairly well, but I have noticed that they are very liable to an overgrowth of the scaly covering of the feet. A silly attempt is now being made to introduce the Song-Thrush and Blackbird into Darjeeling, which is already well stocked with more attractive species of birds, especially *Lioptila capistrata* and *Liothrix lulea*.

FAMILY PLOCEIDÆ.

The typical Weavers of the genus *Ploceus* all occur commonly in the Bazaar, except the true *P. megarhynchus* (see Ibis, 1901, p. 2), which is unknown to the dealers. *P. atrigula* (*P. megarhynchus* of the 'Fauna of British India') is often brought in as a young bird, and evidently breed near here. *P. baya* is only known as a bird brought down from Lucknow, most of the specimens being males. Many of that sex of *P. atrigula* show a few yellow feathers on the breast when in full plumage.

Foudia madagascariensis used to be occasionally imported in very small numbers, but I have not seen any lately.

Of the small Munias and Waxbills, *Sporagilus amandava*, *Munia atricapilla*, *Uroloncha punctulata*, and *U. malabarica* are all very common, as might be expected. *Sclistospiza formosa*, *Munia malacca*, and *Uroloncha striata* are much less often seen, but may be obtained now and then. Intermediate forms between *M. malacca* and *M. atricapilla* often occur, and are doubtless hybrids. Wild specimens of *Uroloncha acuticauda* are rarely seen, but the domesticated Japanese race (known to home amateurs as the "Bengalee") is constantly present in the Bazaar, in one or other of its three forms—the brown and white (grading completely into the wild type), the fawn-and-white, and the pure white, the last being the rarest. It is somewhat curious that no form exists, apparently, intermediate between the fawn-and-white and brown-and-white types, but a similar broad distinction exists between the cinnamon and green forms of the domestic Canary.

Of the small exotic Ploceidæ *Munia maja*, *M. castaneithorax*, *Tanipopygia castaneotis*, and *Estrella astrild* are the most common; but *Poephila mirabilis*, *P. gouldiæ*, *P. acuticauda* and *P. cincta* have been imported, the two former most frequently and the latter only quite recently, together with *Edemosyne modesta*.

Erythrura prasina, though occurring in our empire, is of course only known here as an imported bird, and does not usually do well.

I have in my prefatory remarks already alluded to the Java Sparrow as a commonly introduced bird, and now need only mention that the more or less pure white domestic form from Japan is even more constantly an occupant of the dealers' cages presumably because it sells at a much higher price, and is therefore not so readily disposed of.

FAMILY FRINGILLIDÆ.

The ubiquitous Canary is, of course, a very common cage-bird in Calcutta, and will probably tend to displace many native species in the affections of the people. Most of those sold here come from China; they are small birds, generally of the pale whitish-yellow tint known to fanciers in England as "buff," green or pied birds being relatively few, and full bright yellow and cinnamon being rarely ever seen.

I once saw a green bird (not a hybrid of any sort) marked with yellow on the quills and tail, like a Greenfinch. The note of these Chinese

Canaries is very soft and pleasant, and they generally resemble the German type of bird. Maltese and a few English Canaries are also imported, the latter fetching three and four times the price of Chinese forms.

The only Indian Finch commonly kept as a songster is the "Tuti" (*Carpodacus erythrinus*); this of course loses the red colour after moulting in confinement, like other carmine-tinted Finches. Several other species, however appear in the Bazaar, generally to form part of mixed collections, viz:—*Emberiza luteola*, *Hypacanthus spinoides*, and, less commonly, *Emberiza melanocephala*, *E. aurcola*, *Melophus melanicterus*, *Gymnorhis flavicollis*, and *Carduelis caniceps*. A large consignment of the last-named came down during the past winter, but the birds did not thrive as a rule. A few individuals of the Eastern form of Linnet (*Acanthis fringillirostris*) have also been brought in, and I noted that the males, when kept over the moult, lost the red, as the home Linnet does. I have also seen a few specimens of *Meloponia pusilla*.

Of exotic Fringillidæ, *Chloris sinica* is the most common, except of course the Canary; a good many examples of *Eophona melanura* used to be imported, but they were greatly subject to disease of the feet and have not been very popular. The European Goldfinch (*Carduelis elegans*) is generally to be found, but comes in very small numbers; it does not feel the heat at all, nor does it gasp, as many native species do. Bullfinches (*Pyrrhula europæa* and *P. major*) may sometimes be had, as may also the Brambling (*Fringilla montifringilla*), the specimens of this bird being imported. A species of *Serinus*

I think *S. icterus* is not uncommon. American Cardinals (*Cardinalis virginianus* and *Paroaria cucullata*) have been brought here and have done well, but have not sold very readily.

FAMILY ALAUDIDÆ.

Larks are popular here as cage-birds, especially the "Chendool" (*Galerita cristata*) and the "Agheens" (*Mirafra*). *Melanocorypha bimaculata* is also brought down to Calcutta in numbers at the close of the cold season, while a few specimens of *M. mongolica* may generally be seen, as it is pretty regularly imported. Another Chinese Lark is often to be noticed, *Aldaia gulgula*. I think—at any rate it differs, like that bird, from *A. arvensis* in its similar size, shorter wings and tail, and larger feet. These birds are expensive, costing between ten and twenty rupees, although not apparently different from Indian specimens of *A. gulgula*, which I have never seen caged. But the custom of wrapping up the cages has limited my knowledge of Larks to a very great extent.

FAMILY NECTARINIIDÆ.

Both *Arachneclhtra asiatica* and *A. zeylonica* may be occasionally seen at the dealers' establishment, but can hardly be expected to thrive. Nevertheless, I have known the latter kept by Europeans for many months, and I deposited one of the former safely in the London Zoological Gardens in 1897, although it was in poor

condition and did not live long. Mr. Rutledge informs me, however, that this species is kept in some places as a song-bird, so that certain natives must understand how to treat it.

FAMILY DICÆIDÆ.

A few examples of *Dicaeum cruentatum* are occasionally on sale, but these birds, though they will eat bananas greedily, are not easy to keep. This is a great pity, as they are not only very pretty, but quite the tamest and most fearless of any small bird I know.

FAMILY PITTIDÆ.

A few specimens of *Pitta brachyura* hand-reared birds occasionally come into Mr. Rutledge's hands, but this species is certainly not common in cages. Although not a songster, it makes a very nice pet, owing to its tameness and amusing gestures.

FAMILY PICIDÆ.

The only Woodpecker caged here, and that but rarely, is the common *Brachypternus aurantus*, hand-reared specimens of which get very tame and thrive well in confinement. From the readiness with which they partake of plantains, I fancy that the species must be naturally more or less of a fruit-eater. The outer hind toe (third toe) is certainly reversible in this species - and, indeed in some other Woodpeckers that I have noticed—for it often points literally forwards when the bird is moving about in a cage. Nestlings of this species have a warty pad on the hough, and shuffle about on it without the aid of the toes.

FAMILY CAPITONIDÆ.

I have more than once seen a statement in print that Barbets do not thrive well in captivity; but this is quite a mistake, at all events as regards most Indian forms. The first Barbet I ever saw alive was an example of *Cyanops asiatica*, which lived for at least six years in the London Zoological Society's Parrot-house. This species is the easiest of all to keep, both hand-reared and wild-caught birds being exposed for sale in the Turret Bazaar, where some may practically always be found. Several individuals may safely be placed together in one cage, which is not the case with other Barbets, and a great many must reach Europe; indeed, the bird is only kept for export, and is certainly not unfrequently on sale in England. A few specimens of *Megalaima marshallorum* and of *Thereiceryx zeylonicus* are occasionally seen here, and *M. vivens* sometimes arrives from China. The Coppermith (*Xantholaima hæmatocephala*) is often brought in to the dealers, but never lives long, as they will feed it on "satoo," a diet which kills it in a very few days. Yet on bread-and-milk and fruit, or the latter only, it lives well.

FAMILY CUCULIDÆ.

The male Koël (*Eudynamis honorata*) is a very popular pet with natives, and is always on sale

here. Many examples are reared from the nesting stage by hand. The young birds that I have observed do not seem to bear out the theory that both sexes are at first entirely black, and that the female assumes her proper livery later. Some young males are quite black, and others are black sparsely spotted with buff. The young females are much like the adults of that sex, but have the upper half of the head and the nape black. In all young birds the bill is black, not green, as in the old.

The only other Cuckoo I have met with commonly in cages is the "Popiya," or Brain-fever-bird (*Hierococcyx varius*), the note of which is as much esteemed by natives as it is disliked by Europeans. It does not keep its plumage in such good condition as the Koël, which seems to do very well as a cage-bird. The Crow-Pheasant (*Centropus sinensis*) is often brought in, not as a pet, but on account of some fancied medicinal virtue. I have noticed two types of young Crow-Pheasants, which never seem to occur in one brood, at least they are not sent in together. One is a large barred bird, usually taken as the typical young of the species, which is very easy to tame. The other is smaller, especially as regards the bill and feet, and shows no trace of bars, but is a dull edition of the adult. When full-fledged it is wilder than the first, has a longer tail, and is inclined to hop as well as walk. It also moults much later. This is as much as I have yet been able to make out from studying the live birds, and I am not sure whether these uniformly-coloured young are merely the males, as Jerdon says, or a distinct race, or even species. Against the latter view, and tending to prove the existence of much variation, may be instanced the fact that we have in the Indian Museum the skin of a nestling which is in *perfectly bright adult plumage*, whereas the young birds of the second type mentioned above resemble those of *C. chlororhynchus* as figured in Captain V. Legge's 'Birds of Ceylon,' or may be even duller and darker. All the young birds that I have seen have grey eyes and black bills, flesh-coloured at the base in the case of the barred specimens.

PSITTACI.

The Parrots are of course very important in the present connection, though many of them are not cage-birds in the literal sense, for they are quite as often chained, as mentioned above; this is the case even with Parrakeets and Lorries. Many foreign species are imported, and some very rare forms occasionally occur; but, not being specially interested in the group I have not kept any record of these, and must confine myself to the more usual importations. But I would strongly advise any member of the B. O. U. who likes rare Parrots, or wants specimens of them, not to neglect examining the Calcutta dealers' stock, if he ever has the opportunity of so doing.

(To be Continued.)

THE OSPREY OR FISHHAWK; ITS CHARACTERISTICS AND HABITS.—VIII.

BY THEODORE GILL, Washington, D. C.

Continued from Vol. V, p. 125.

VALUE OF VARIATIONS.

The question arises, what is the systematic value of these variations? Attentive consideration has not revealed any constant difference between any of the geographical races or any morphological characteristics coincident with differences of range. While, as a rule, the American form is distinguished from the Eurasiatic by the coloration of the breast, the difference is not constant. As to the Australian form, it is generally smaller, but a few European and Eurasiatic individuals fail to attain a larger size than the average Australian and, on the other hand, giants of the latter race may exceed dwarfs of the northern forms. In view, then, of what is known at present no more than sub-specific rank at most need be given to the several races. To equal rank, perhaps, the almost unknown Bahaman race may be provisionally assigned.

So far as the remarks just made concern the northern forms, the writer can corroborate the conclusions already reached by others from personal observation. As to the Australian form he has to rely entirely upon others, and especially Mr. Ridgway, as no specimen is in the collection of the United States National Museum. Under these conditions, it seems best to adopt the conclusions as expressed by Mr. Ridgway in the "History of North American Birds" (iii, p. 182). Mr. Ridgway had especially studied the question of variation in the genus *Pandion* for that work and examined the specimens in the Academy of Natural Sciences of Philadelphia, as well as those in the National Museum. Among them were the specimens of *Pandion leucocephalus* obtained by Gould in Australia.

As to the *Pandion ridgwayi*, no definite information can be given, and it is retained here simply on account of the impression left on Mr. Ridgway's mind after examination many years ago.

The essential or primary synonyms remain to be named and may be given in the following form.

THE EUROPEAN OSPREY.

(PANDION HALIAETUS HALIAETUS.)

Falco haliaetus *Linne* Syst. Nat., ed. 10, p. 91, 1758; ed. 12, t. 1, p. 129, 1766.

Pandion (*Falco haliaetus* *L.*) *Cuvier* Règne An., i, p. 316, 1817.

Pandion haliaetus *Baird, Brewer and Ridgway* Birds N. Am., vol. iii, p. 183, 1875.

An Osprey of normal size ("wing, 17.00-20.50; tail, 7.00-10.00; culmen, 1.20-1.15; tarsus, 1.95-3.15; middle toe, 1.50-1.90"); with "second or third quills longest (in eighteen specimens from Europe and Asia); first longer than fifth; breast always (?) spotted with brownish, or uniformly

so; top of head with the black streaks usually predominating; tail with six or seven narrow black bands, continuous across both webs".

An inhabitant of the Palaearctic and Oriental and African realms.

THE AMERICAN OSPREY.

(PANDION HALIAETUS CAROLINENSIS.)

Falco Haliaetos y carolinensis *Gmelin Linnæi* Syst. Nat., ed. 13, t. i, p. 263, 1788.

Pandion carolinensis "Nob." *Bonaparte* List Birds Europe and N. Am., pp. 3, 1838.

An Osprey of normal size ("wing, 17.50-21.50; tail, 8.70-10.50; culmen, 1.25-1.40; tarsus, 2.00-2.40; middle toe, 1.70-2.00"); with "second and third quill longest; breast often entirely without spots; top of head and nape usually with dark streaks predominating; all with six to seven narrow black bands, continuous across both webs".

An inhabitant of America.

THE BAHAMA OSPREY.

(PANDION HALIAETUS RIDGWAYI.)

Pandion ridgwayi *Maynard*, Am. Exchange and Mart, ii, p. —, Jan. 18, 1887; p. 69, Feb. 5, 1887.

An Osprey apparently of reduced size; (wing 17); with relatively large and tumid bill ("bill, 1.35") and tarsi. ("2.35"); "entire lower parts white" and back paler than in *P. carolinensis*.

An inhabitant, so far as recorded, only of the Bahama Islands; a doubtful subspecies.

THE AUSTRALIAN OSPREY.

(PANDION HALIAETUS LEUCOCEPHALUS.)

Pandion leucocephalus *Gould*, Proc. Zool. Soc. London, pt. 5, p. 138, 1838; Syn. Birds Australia, pt. 3, p. 22, pl. 6, 1838.

An Osprey of reduced size ("wing, 17.50-19.50; tail, 9.00-10.00; culmen, 1.25-1.40; tarsus, 2.10; middle toe, 1.70-1.95"); with "third quill longest, but second just perceptibly shorter (eight specimens, including Gould's types); breast with the markings sometimes (in two out of the eight examples) reduced to sparse shaft-streaks, but never (?) entirely immaculate; top of the head with white streaks usually predominating, sometimes (in three out of eight specimens) immaculate white (the occiput, however, always with a few streaks); tail with six to seven white bands on the inner webs, which (according to Kaup) do not touch the shaft".

Inhabits Australia and the Moluccas.

THE END.

THE OSPREY.

An Illustrated Magazine of Popular Ornithology.

Published Monthly.

By

THE OSPREY COMPANY.

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Comments.

WORK AND WORRY FOR THE CLASSICISTS.

Some more apples of discord have been thrown into the nomenclature ring!

In the last number of the Osprey for August, some names given to genera of birds by French naturalists of a past generation were specified. We commented on their nature and wondered what our classical friends who will not tolerate bad Latin or Greek would do. The trouble of the classicists, it seems, will be still further increased by modern sinners. An Italian naturalist resident in La Plata, Dr. Florentino Ameghino, who has been very active for a number of years in the description of the exceedingly rich ancient mammalian and avian faunas of Argentina, has very recently added a number of generic names of a fearful and wonderful kind. He has apparently exhausted the resources of ordinary Latin and Greek and, fearful of giving names preoccupied in other divisions of zoology, has invented a new and strange system of nomenclature. Wishing to honor distinguished mammalogists and paleontologists, but unable to give tenable terms based on their family names alone, he has combined, in a grotesque

whole, given names (sometimes first and middle) with the family. Some examples of the many results of this system of compounding follow:

AMILNEDWARDSIA (after A. Milne-Edwards).
 ASMITHWOODWARDIA (A. Smith Woodward).
 EDVARIOCOPEIA (Edward Cope).
 EDVARDOTROUESSARTIA (Edouard Trouessart).
 CAROLOAMEGHINIA (Carlo Ameghino).
 RICHARDOLYDEKKERIA (Richard Lydekker).
 GUILIELMOSCOTTIA (William Scott).
 OLDFIELDTHOMASIA (Oldfield Thomas).

Will the classicists accept these names? Will they try to amend them? Or will they substitute new names? Undoubtedly, there will be a difference of opinion between representatives of the school. We may be sure that Dr. Cabanis and Count Salvadori, for example, would not admit such monstrosities in Ornithology. But how will others act?

These names are cacophonous; others formed against principles of good usage are euphonic.

The very recent publication of a new name for a genus of crustaceans reminds us of another strange method of nomenclature originating with an Englishman.

In 1818, W. E. Leach gave names for genera of Isopod crustaceans which have tried the ingenuity of etymologists, such as CIROLANA, OLENCIRA, CONILERA, ANILOERA, NEROCILA and ROCINELA. Agassiz did not recognize their nature and must have been put to considerable trouble in attempting to decipher them. (Leach gave no assistance.) Two of them were designated by him as proper names ("*Nom. propr.*") but Aniloera was derived from "*ανίλειος*, in-misericors [=unmerciful], *ορις*, acer [=prominence]" and Olencira from "*ωληρ*, ulnus" [=elbow or fore arm]; *αίψια*, fascia [=band or girdle]". (There was no reason for such meaning names but no matter.) Rocinela and Nerocila were given up in despair, and his failure indicated by six dots ("")!

Probably Leach had no idea of a Greek etymology for any of the words in question. Anyway, so good a historian of carcinology as the Rev. Thomas R. R. Stebbing tells us that "Leach is said to have framed" them "without any meaning or derivation, but simply by placing in various positions the same four consonants, and interspersing vowels to suit the requirements of his ear".

The words, in fact, are anagrams of each other. Evidently the basis of the words was Caroline or Carolina. The possibilities of this familiar name for anagrammatizing doubtless

occurred to Leach and he began the play upon the letters and their transmutation. Verily, he seems to have imbibed as much affection for the name and been as much comforted by its repetition as was the good old woman by "that blessed word Mesopotamia" in her Bible. He was so well satisfied with it in any form, that he took the same letters (only substituting sometimes *c* for *a*) and juggled them into not less than seven new compounds, including a name (*Canolira*) not adopted by recent systematists. Still another name (LIVONECA) may have originated from a simple typographical error for Lironeca, again an anagram of Caroline.

The example thus set was not avoided, but actually followed by others. None was rejected (as some ornithologists would have done in analogous cases) but all have been accepted without serious demur. Kossman followed with another anagram (CORILANA) in 1880 and Hansen with two more (ALCIRONA and LANOCIRA) in 1890. In this year of Grace 1901 and month of September still another anagrammatic name (NALICORA) has been proposed (by Dr. H. F. Moore) for another genus of the same series. CAROLINA has not yet been used nor its palindrome ANILORAC; we may yet see them (and also ENILORAC) utilized for other genera!

Perhaps some of the readers of the OSPREY may recall the names of genera of birds that have been coined on a like principle. The best known are anagrams of the chief names of the Kingfishers, *Alcedo*, *Dacelo* and *Lacedo*. *Dacelo* (given by Leach) was rejected by Cabanis and Heine, who took Gloger's substitute *Paralcyon*, but otherwise has been generally adopted.

Lacedo (of Reichenbach) was replaced by Cabanis and Heine with a new name (*Carcinectes*) and the latter has been almost universally accepted though *Lacedo* was given ten years earlier and really should be retained. The author of *Lacedo* has given another anagrammatic name in the same family, *Hylcaon*, an anagram of *Halcyon*.

Now, what will our classical friends do about such names? They can't be corrected for they never had a meaning or were intended to have. In other words, they were what some would call pure "nonsense names". Yet they are euphonic and serve their purpose as well as the most classical ones for those who are not too inquisitive about etymologies. But if it is conceded that such names may be adopted, why shouldn't misformed ones be also adopted—especially if they are euphonic? Just call the misformed abortions "nonsense names" and adopt them!

We by no means defend the propriety of such names; they are truly deplorable and if unanimity could be secured for their rejection we would most heartily join the exclusionists. The question is a practical one, however. Unanimity cannot be secured. The majority of naturalists throughout the world would favor their adoption and retention. Therefore we are willing to sacrifice our own preference and adopt them in the interest of Law and Order. Diversity of opinion will be sure to exist among classicists as to what names should be retained and what adopted. Let us follow rigorous laws, then, but curse, if we will, those perverse or ignorant naturalists who throw such obstacles in the way of concord.

Notes.

ANOTHER INSTANCE OF THE SPOTTED SANDPIPER (*ACTITIS MACULARIA*) CARRYING ITS YOUNG.

Mr. J. C. Merritt's article on this topic in the January number of the *Auk* for 1897, page 52, recalls a similar episode.

On June 22, 1894, I was collecting in a sand pit, a mile south of Gladstone, Henderson County, Ill. Seeing a Spotted Sandpiper much worried and distressed, I began to look for her nest, but was unable to find it. Profiting by former experiences I planted a mark in the sand to designate the approximate locality of the nest. An hour later I returned, and having approached the stake from behind a sand mound I had the pleasure to see Mrs. Sandpiper drag herself away, the sickest looking bird I ever beheld. In fact she seemed so completely prostrated, (drooping wings and spread tail,) that

she resembled a turtle rather than our trim little Tip-up.

But by far more interesting to me were the three little balls of cotton which were running, (rolling I would almost wish to say), at such a remarkable rate of speed, in three different directions that, had my eyes not been riveted on one and my feet in motion, all would no doubt have been in safety. As it was I captured one of the downy bits of bird-life.

While admiring this bluff bit of animation, I noticed the mother bird flying about me in circles, uttering that plaintive note which to me then sounded very much as if she was inviting all nature to weep, weep, weep, weep, weep.

Whether one of the little ones had responded to the mothers note or whether she had discovered it in too exposed a position I am unable

to tell; she suddenly alighted, ran a few steps and then flew by me to cross a little lake (puddle), with a young bird in her bill (not in the feet as Mr. Merritt's bird was transported, but in the bill). It appeared to me as if the young was carried by the neck.

I waited awhile hoping that the bird would repeat the performance with the second remaining bird, but although she kept close at hand while I scanned the few dwarfed blades of grass which grew about the place, I did not get another glimpse of the young.

I have since then observed the young of this species many times, but this is the only instance in which I have seen them transported by the parent.

During all this performance I only noticed one of the old birds, and it is not unlikely that the male was off on a hunting excursion at Sand-Lake, a quarter of a mile distant.—

BARTSCH.

A FEW NOTES FROM MISSOURI. I have been visiting the Chariton River, near Unionville, every spring and fall for several years, but never until this spring did I find the Kentucky Warbler except on rare occasions. This year, however, it is one of the most abundant birds. I have just returned from a two weeks trip to that place, and in the last four days I found three nests of these Warblers. These birds and Yellow-throats were the only Warblers nesting at this time, and only one of the Kentucky Warbler's nests contained eggs. When I found the nest on Thursday morning, May 23, it was just completed, and by night contained one egg. Next evening two eggs, and one of the Cow-bird's were found. As we were going to start home that evening, I went down in the afternoon to collect nest and bird, for I had failed to identify her positively owing to her wild nature. I could not get a shot at her until about 5 o'clock, as I could not get near the nest without her flying, and she would not return while I waited. By posing myself behind a tree near which she generally flew when leaving the nest, and having one of the boys with me approach the nest, I at last managed to secure her. On dissection I found one egg broken by shot so the full set would have been four. The nest was near the river bank, in thick timber, placed in a small hickory sprout which had a very prickly vine growing about it. It was about one foot above the ground, composed of very fine white grass, with a few leaves at the base; the other two nests were on the ground, in thick bushes, and were much more bulky than this one, and composed largely of leaves. Two of the eggs were faintly marked with red; one heavily blotched at the larger end.—W. T. RINKER.

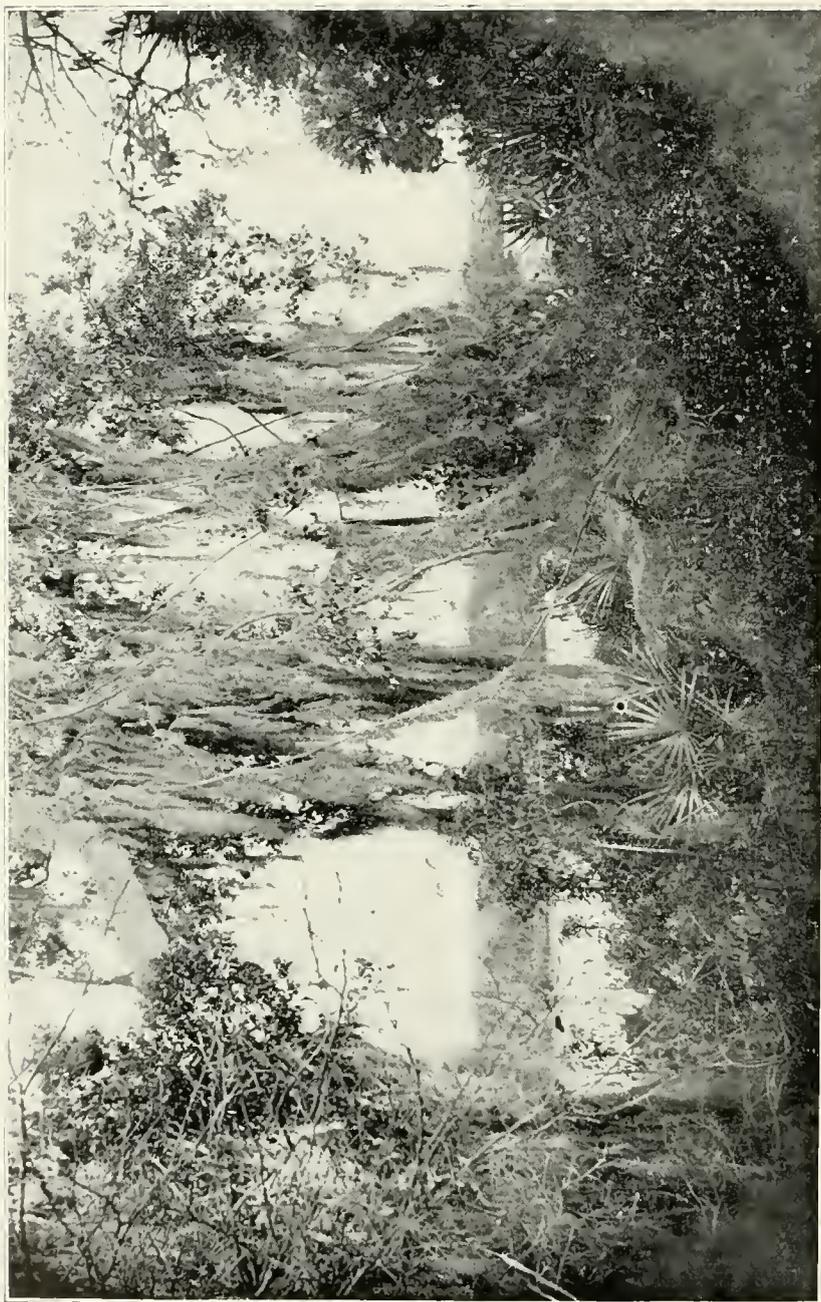
We are sorry to state that the photograph is not clear enough to permit of reproduction. We hope Mr. Rinker will have better success in this direction next season and will give us an account of his 1902 experiences with *Geothlypis* (*Opornis*) *formosa*.—ED.

ATTEMPTED INTRODUCTION OF CAPERCAILZIE. "Reciprocity in game birds seems to be the doctrine just now being practiced by the United States and Sweden," said a prominent commission merchant of this city to a Star reporter recently. "Five thousand 'Bob Whites,' in a lively and healthy condition, have just been shipped to that country, at a cost of \$3,500. They have been forwarded in cages constructed specially for the purpose, and the best hopes are entertained that the birds will do well in their new home, inasmuch as a few introduced in Sweden last year on the estate of Count Lewenhaupt at Fosslorjo have done excellently, enduring the winter very well.

"Not long ago Sweden sent us a number of specimens of one of her most valuable game birds, the Capercaillie. This bird is the largest and noblest of the grouse family, to which our Prairie Chicken and Pheasant belong. A Capercaillie weighs as much as twelve pounds, approaching in size the American Wild Turkey. Extremely hardy, it abounds in the great forests of the Scandinavian Peninsula, Finland, Russia and northern Asia. It endures the severest cold, often burrowing into the snow in very bitter weather for warmth and shelter. Whether they will do well in this country is a question which it will take a longer time to decide".—*Evening Star*.

THE DEATH OF FRANCIS JOSEPH BIRTWELL removes a former contributor to THE OSPREY. Mr. Birtwell had little more than passed the threshold into manhood, having reached the legal age only last September. He was born in September, 1880, at London, England, but was brought at an early age to Boston, Mass. He passed through public schools of Boston and thence into the Bussy Institute. In the summer of 1899 he studied in the Biological Laboratory of the Brooklyn Institute. The premonitory symptoms of consumption which became manifest while there compelled him to give up his life in the east and he removed to New Mexico in hope that the dry air of that territory would prolong his life. He continued his studies in the University of New Mexico and devoted especial attention to the birds of the territory. He sought the objects of his investigations in the open as well as dissected them in the closet and it was in the attempt to secure a nest at a height of sixty odd feet above the ground that he fell and death ensued from his injuries. He had arranged to complete a volume on "the Ornithology of New Mexico" which was to be accepted as a thesis on his graduation from the University. Last May he was married to Miss Olivia Morton of Iowa.

Mr. Birtwell contributed an illustrated article on "Aptosochromatism in *Chrysotis levaillanti*", the Mexican Yellow-headed Amazon Parrot, to THE OSPREY for April, 1899, (iii, 113-117,) which was highly eulogized by Doctor Cones. He was also a contributor to the *Auk* and other periodicals.



LOOKING ACROSS THE KISSIMMEE RIVER.

From Orange Hammock through Live Oaks festooned with Spanish Moss.

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Original and Selected Articles.

SOME BIRDS OF THE KISSIMMEE VALLEY, FLORIDA. II.

BY WILLIAM PALMER, Washington, D. C.

16. LITTLE BLUE HERON. (*Florida carulea*).
Fairly numerous, the white phase being the most abundant. This was the only Heron to which one could walk openly to within gunshot, and several times, while standing motionless, I have had them come within forty yards evidently inspecting me. One that I shot by simply walking up to it was a fully adult bird, though white. The dorsal feathering had more or less dark centers though hardly noticeable owing to the overlapping of the feathers. An adult, blue phase, female bird shot March 20, had the head, neck and back plumes still in an unfinished moulting condition.

17. GREEN HERON. (*Butorides virescens*).
Fairly common, especially at the end of our stay. I found a nest containing one egg well incubated, on March 23. It was in a willow bush growing in about four feet of water, and while standing in the boat I could look down into the nest.

18. BLACK-CROWNED NIGHT HERON. (*Nycticorax naevius*).
Common in the river swamps where they both roost and feed.

19. YELLOW-CROWNED NIGHT HERON. (*Nyctanassa violacea*).
Common on the Kissimmee River at its upper end; not seen at Orange Hammock.

On several occasions solitary individuals (on March 20, a pair) of what appeared to be a different species of Heron than any given above were seen. Larger than the Reddish Egret, they appeared to be of a uniform pale slaty color all over, though perhaps lighter on the back.

20. SAND HILL CRANE. (*Grus mexicana*).
Except once, always seen in pines in the prairies; only once did I see a bird alight at the edge of the river.

21. LIMPKIN. (*Aramus giganteus*).
More abundant above Lake Kissimmee than below. Killed by everybody for food. We probably did not see and hear more than a dozen.

22. VIRGINIA RAIL. (*Rallus virginianus*).
One seen.

23. CAROLINA RAIL. (*Porzana carolina*).
A few seen; very tame.

24. AMERICAN COOT. (*Fulica americana*).
Extremely abundant in flocks among the "lily pads" and weeds in the river shallows. They are very noisy.

25. FLORIDA GALLINULE. (*Gallinula galeata*).
Not seen until March 17, usually in pairs.

26. JACK-SNIPE. (*Gallinago delicata*).
Abundant along the banks of the river. Often four or five would rise at once, and several times I saw small flocks of eight or ten. They were moulting during the last half of March.

27. EASTERN DOWITCHER. (*Macrorhamphus griseus*).
Saw one from the deck of the steamer on March 23.

28. PECTORIAL SANDPIPER. (*Tringa maculata*).
Saw one large flock maneuvering on the evening of March 14, over wet meadows along the river.

29. SEMPALMATED SANDPIPER. (*Ereunetes pusillus*).
Saw one with some Kildeer in a prairie pond on March 20, in Osceola county.

30. YELLOW-LEGS. (*Tolanus melanoleucus*).
Not common, single birds usually seen with the next species.

31. LESSER YELLOW-LEGS. (*Tolanus flavipes*).
Not common, usually in small flocks of three or four along shore.

32. SPOTTED SANDPIPER. (*Actitis macularia*).
One seen at Drigg's, March 18.

33. HUDSONIAN CURLEW. (*Numenius hudsonius*).
A few seen flying.

34. KILDEER. (*Aegialitis vocifera*).
Common and noisy.

35. FLORIDA QUAIL. (*Colinus virginianus floridanus*).
Common, especially about the palmetto "islands" at the edges of the prairies. All birds collected were in poor plumage. Saw none paired or nesting. Two males measured each 9.13 inches long, and one 13.63 in extent the other being 13.75. Four females were as follows: 9.25 x 13.63, 8.75 x 13.75, 9 x 13.75, 9.25 x 14.25.

It was Mr. Drigg's habit to feed a flock of these birds daily, and they always appeared in time for the expected feast.

36. MOURNING DOVE. (*Zenaidura macroura*).
Very abundant in flocks about burnt places on the prairies.

37. GROUND DOVE. (*Columbigallina purpurea*).

Not often seen; usually about the houses, and sometimes seen perched on the gables. One was seen on a lumber pile in a street in Kissimmee. They were pairing at the end of our stay, and I found a set of two fresh eggs on March 15. This was on the ground at the base of a tuft of grass and a huckleberry stem. There was no attempt at concealment. The nest is a very simple affair; a few coarse twigs and grass stems placed on the lowest side to even the ground, then the nest proper, a small quantity of dead grass stems laid in every direction and though doubled and bent to keep within a diameter of four inches, they only form a platform slightly hollowed.

Mr. Chapman has called this bird *C. passerina terrestris* (Bull. Am. Mus. N. It., 1892, p. 293), but I believe Mr. Maynard's older name is tenable for the following reasons. 1. Mr. Maynard's discussion as to the basis of *Columba passerina* of Linnaeus is immaterial in considering the value of his name, for it is a fact, that many names are accepted even when every allegation of the author is erroneous, the fastening of the name being determined by the belief that no other form could have been intended for the name. 2. Mr. Maynard's well-known experience with the birds of Florida precludes us from accepting for the name anything else but the "larger continental Dove", "the common ground Dove" so well-known to him. 'In the event' etc., has no adverse bearing on the tenability of *C. purpurea*, for such a questionable wording has rarely been considered a bar to the acceptance of a name when the form could be identified. 3. Mr. Maynard may at any time produce the type of his *C. purpurea*.

As Mr. Maynard's paper is not readily accessible to many, I quote the part relating to the Doves.

"BAHAMA GROUND DOVE

"*Chamaepelia Bahamensis*.—Similar to the common ground Dove, but with a bill constantly wholly black, and much smaller and paler; occurs through the Bahamas. It is only after considerable hesitation that I name these species even provisionally. It is possible that Linnaeus' *Columba passerina* was based on specimens of this species, and not on birds of the continent of North America.

"In event of this proving the case I propose the name of *Chamaepelia purpurea* for the larger continental Dove". C. J. Maynard in The American Exchange and Mart, Jan. 15, Feb. 5, 1887, 69.

As a matter of fact *Columba passerina* was based on Sloan (Jamaica) and Catesby (South Carolina). But these two birds are different, and also the Bahaman, and general usage had given the name to the Florida bird merely

because authors have had occasion to mention that bird more frequently and knew it best. Maynard was the first to give a name to the second and third of these three birds, but he was not able to fix the *Columba passerina* of Linnaeus according to modern nomenclatural usage. In effect his action left this name for the 'residue' which is the Jamaican bird, a treatment followed by Chapman and Scott. The value of the 'not' in Mr. Maynard's discussion, as an offset to his choice of the wrong habitat for *C. passerina* has been overlooked by Mr. Chapman.

The following may be interesting in this connection. The Bahaman bird is small, very pale and has a dark bill. The Florida bird is larger and the base of the bill is red. The Jamaica bird has the base of the bill orange in most examples. Now Sloan figures his bird with a dark bill, but mentions the yellow, while Catesby figures his with a yellow base. The red of the base of the bill in the living Florida bird changes to a dirty yellow in the dried skin, so that it seems sure that Catesby drew his picture from a dry skin while Sloan or his artist evidently used memory or an immature bird for the purpose. The Cuban bird is different from either and will be described in another connection.

38. TURKEY VULTURE. (*Cathartes aura*).
Common and very tame.

39. BLACK VULTURE. (*Catharista atrata*).
Commoner than the above species, and always seen in companies of three or more. They search the burnt areas for dead animals.

40. FORK-TAILED KITE. (*Elanoides forficatus*).

Occasionally seen; always flying; on two occasions single birds, usually five to eight. One shot at Lake Arbuckle on March 10, measured 22.63 x 49 inches in extent. The longest tail feather on the right side is half an inch shorter than the corresponding feather. The irides of this bird were very dark brown, at the distance of only a few feet they appeared black.

41. MARSH HAWK. (*Circus hudsonius*).

Several seen, almost every day "working" the swamps and prairies; but one adult male seen.

42. SHARP-SHINNED HAWK. (*Accipiter velox*).
One seen.

43. RED-TAILED HAWK. (*Buteo borealis*).

Three seen, always about pines.

44. FLORIDA RED-SHOULDERED HAWK. (*Buteo lineatus alleni*).

Fairly numerous and noisy. An immature female collected March 15, in a gum and cabbage palmetto hammock where it had a nest. It contained one egg almost ready to lay. The stomach of this bird contained the remains of a cotton rat, a few feathers, parts of a crawfish and remains of the hard parts of beetles.

45. BROAD-WINGED HAWK. (*Buteo platyterus*).

Saw one.

46. BALD EAGLE. (*Haliaeetus leucocephalus*).

Seen at intervals. The soaring and sailing habits of this bird are seen to far better advantage on these prairies than I have ever seen elsewhere. The apparent ease with which it gradually circles upwards until it appears as a

mere speck is unapproached by any bird that I know.

47. SPARROW HAWK. (*Falco sparverius*).

Often seen, and usually in pairs.

48. CARACARA. (*Polyborus cheriway*).

Several individuals seen nearly every day, but adult males were far less numerous than female birds. Usually very tame. I have walked under a tree while one sat not ten feet above me. Often seen eating maggots about dead cows, and also frequents burnt timber and prairie for the dead animals they may contain. The long legs, upright position when standing, walking or running, and the general appearance of the bird recalls to mind the usual pictures of the Secretary bird (*Serpentarius*). Indeed, the cut of this last bird given by Newton (Dictionary of Birds, p. 823) with slight changes would answer remarkably well for the Caracara or Mexican Buzzard as it is called in the Kissimmee Valley. Specimens of full plumaged males taken March 18, were just beginning to moult, the two central feathers of the tail and the fifth primary being the first to be renewed together with a few throat feathers. No moulting change was noticeable in any specimens of female birds. In these last, the central tail feathers are excessively worn and the generally bleached and worn appearance of the plumage is in great contrast with the much less faded and worn feathers of the males.

49. AMERICAN FISH HAWK. (*Pandion carolinensis*).

Occasionally seen.

50. FLORIDA BARRED OWL. (*Syrnium nebulosum alleni*).

Generally in pairs in every large hammock. Young birds leaving the nest were seen March 23.

51. FLORIDA SCREECH OWL. (*Megascops asio floridanus*).

The only bird seen. I shot at Lake Arbuckle on March 8. Its note was a mere trembling effort, and the specimen was intermediate in coloration. Measurement 8.12 long by 21.50 in extent.

52. GROUND OWL. (*Speotyto floridana*).

Quite numerous in some places between the prairie edge and the ponds and sloughs; also found on the higher portions of the prairies where the burnings have denuded the ground of vegetation. These birds are always known as Ground Owls in the Kissimmee Valley. Two males measured respectively 8.50 by 23.37 and 8.87 by 23.50. Three females were 8.75 by 23.75, 8.50 by 23.25 and 8.87 by 23.50.

I cannot understand the practice that makes this bird subspecific to *S. cucularia* of South

America. It has also no connection with *S. hypogaea* of Western North America nor is there any evidence that it ever did have. Aside from the longer tarsi, larger bill and whiter coloration of the Florida bird as compared with the western, there is one character which serves at once to distinguish the two. In a very large series the under wing coverts and axillaries of *hypogaea* are immaculate, or nearly so, except for a large dark blotch at the proximal ends of the uppermost primary coverts. In a few specimens there is a darkish central shaft streak and occasionally a slight dusky blotch on the vanes (the retention of these dark traces being evidently due to immaturity and therefore reversible). In *floridana* a very large series shows a decided difference. Here all the under coverts and the axillaries are crossed with from one to several decided but variously shaped brownish blotches or bands thus giving the under wing a much different appearance than in *hypogaea* or *cucularia* a difference similar to the West Indian *S. amauro*. North American birds are distinguished at a glance by the coloration of the under wing coverts. Their habits are given in greater detail in the "Auk" 1896, p. 96.

53. KINGFISHER. (*Ceryle alcyon*).

A few seen on the Kissimmee.

54. SOUTHERN HAIRY WOODPECKER. (*Dryobates villosus audubonii*).

Rare, saw and heard two.

55. DOWNY WOODPECKER. (*Dryobates pubescens*).

Saw but one, which was collected.

56. RED-COCKADED WOODPECKER. (*Dryobates borealis*).

Fairly common in small noisy flocks in the pines.

57. PILEATED WOODPECKER. (*Ceophloeus pileatus*).

But few seen. As compared with Maryland and Virginia specimens all Florida birds that I have seen, besides being smaller, have much less white at the base of the central tail feathers.

58. RED-BELLIED WOODPECKER. (*Melanerpes carolinus*).

Fairly common in the hammocks and pines.

59. YELLOW SHAFTED FLICKER. (*Colaptes auratus*).

Common just north of Orange Hammock at the edge of the pines, and apparently feeding always on the ground.

60. CHUCK-WILL'S WIDOW. (*Antrostomus carolinensis*).

Saw and heard one at Orange Hammock, another at Fort Gardiner.

(To be Continued.)



THE CAGE-BIRDS OF CALCUTTA.—III.

By F. FINN, Deputy Superintendent, Indian Museum, Calcutta.

FAMILY LORIIDÆ.

The justice of what I have remarked above is evidenced by the fact that *Trichoglossus forsteri*, which was not even in the British Museum ten years ago, and was only received by the London Zoological Society in 1896, has been, at any rate since I came here in 1894, quite the most commonly imported Lory; indeed, I am not sure that it has not been brought in more numerously than any other exotic Parrot. It thrives very well in captivity, and has bred in the Calcutta Zoological Garden. *Trichoglossus swainsoni* and *T. ornatus* are also not uncommon. Of the other Lories, *Eos viciniata* is, perhaps, the most abundant; but *Lorius garrulus* is also plentiful, *L. domicella* far from rare, and *L. lory* often to be seen.

FAMILY CACATUIDÆ.

The commonest Cockatoos imported are *Cacatua sulphurea* and *C. roseicapilla*, which come in large numbers and are sold for a few rupees only. *C. galerita* is also common, *C. alba* much less so, and *C. leadbeateri* rather rare. The great *C. moluccensis* is always on sale, though not imported in any very great quantity at one time, each bird being anchored in the manner above described to an L-shaped perch of wood, and so kept unless transferred to a swing. I have particularly noticed the great tameness and intelligence of these birds. All of them are eager for notice, and they will frequently invite me to scratch their heads by beginning to ruffle their feathers with one foot—in fact, will make a sign of their wishes. The only other species I have ever seen do this was a Red Macaw lately in Mr. Rutledge's possession; but the action is so universal with these Cockatoos that it may fairly be put down as a characteristic piece of intelligence, though their tameness is, no doubt, due to their being hand-reared.

The Cockateel (*Calopsittacus nova-hollandicæ*) is often imported and generally to be bought; it has bred in the Zoological Garden here. I have noticed that this bird's plumage is remarkably impervious to wet; water poured on it glides off as from a Duck's back.

FAMILY PSITTACIDÆ.

The cage-bird of India *par excellence*, and one of the longest- and best-known anywhere, is of course the familiar Ring-Parrakeet (*Palcornis torquatus*), which is popular both with natives and Europeans, and may be met with, chained or caged, in almost every street. Hundreds of fledged and unfledged young, and of wild-caught adults of both sexes, come into the hands of the dealers. Many of the latter are more or less heavily splashed with yellow; while perfect *lutinos* are far from rare and are extremely beautiful birds. The males in these cases retain the pink neck-ring, and the bill is always red. Such birds fetch very high prices—about eighty

rupees and consequently seldom reach Europe, though some have been exhibited in the London Parrot-House. No attempt has, however, been made to breed the variety in captivity, and the dealers depend for their supply on chance "sports." Yet the form probably has the elements of prominence in it, for Mr. Rutledge assured me that he knows of a case of a pair of normally-coloured birds which always nest in the same tree and always produce a yellow brood, the young being eagerly watched until fit to be taken. Lately I have seen a particularly curious *semi-lutino*, not splashed, but of a shade midway between green and yellow throughout.

Nearly as numerous as the common Parrakeet is the larger "Rock-Parrot" (*P. nepalensis*), but most, if not all, of the examples are, I think, brought in as young birds. In the Turret Bazaar there are at the time of writing (February) a good many examples of the species still so young as to show the dark irides which when immature this and the common Ring-neck exhibit. I have never seen a *lutino* of this large Parrakeet.

The "Blossom-head" (*P. cyanocephalus*) is common in the Bazaar, but is not so popular a cage-bird as the Ring-neck. The Eastern form (*P. rosea*) is also often to be seen. Another common *Palcornis* is *P. fasciatus*, but only quite lately have *P. magnirostris*, *P. schisticeps*, and *P. columboides* appeared here, so far as I am aware, and then there were only a few individuals, except of the last species, of which a good many pairs arrive, and some are still on sale. *P. finschi* I have seen only once; the specimen was secured for the London Zoological Gardens by Mr. Harper.

The common little Lorikeet is often to be met with, and the Malayan *Loriculus galgulus* is frequently imported, both being in favor as inmates of aviaries. I have only once seen *L. indicus*. The only small foreign Parrot numerously imported besides *L. galgulus* is the well-known Budgerigar (*Melopsittacus undulatus*), which thrives and breeds as well here as elsewhere. Mr. Rutledge has seen escaped birds nesting in the open, but I am not aware that the species has established itself. I have never seen or heard of *lutinos* of this species in India, though in Europe such are not uncommon and are advertised for sale.

Several of the larger Australian Parrakeets are imported, *Platycercus eximius* being much the commonest. *P. elegans*, *Polytelis barrabandi*, and *P. melanura* are brought in small numbers, as are also *Ptilines erythropterus*, *Aprosmictus cyanopygius*, and some form of *Barnardius*.

More constantly present than any Australian Parrots, except the Cockatoos, are the common *Eclecti*, especially *E. rostratus*, *E. pectoralis*, and very probably other species, occur, but I cannot be certain about this under the circumstances. A species of *Tanygnathus* is also often imported.

The African Grey Parrot (*Psittacus erithacus*) not uncommonly appears, generally in good health and condition, unlike the majority of

its unhappy fellows in England. *Coracopsis vasa* may also sometimes be procured.

American Parrots, as might be expected, are not often to be seen, but the common Blue-fronted Amazon (*Chrysotis amazonica*) is not very rare, and a few Macaws (*Ara macao*, *A. chloroptera*, and *A. ararauna*) are on sale from time to time, being highly valued by the natives. Mr. Rutledge knew of an individual of the red-and-blue species being kept for no less than three generations in a native family. I once saw two most beautiful dark-blue, red-vented Parrots, somewhat similar in size and style to the common African Grey Parrot, which I took to be examples of *Pionus chalcopterus*, a species I never remember to have seen elsewhere.

COLUMBÆ.

Almost the only other cage-birds remaining to be dealt with are the various Doves and Pigeons, some of which are, however, more properly aviary or menagerie birds. Such is *Goura coronata*, which is imported quite numerous at times, and has been bred by a native amateur, according to information given me by Mr. Rutledge.

The only species of this group really common and popular as a cage-pet is the well-known domestic Turtle-Dove, which is found both in the ordinary cream-coloured form with black half-collar, and in more or less completely albino varieties. It is not identical with the wild *Turtur risorius*, so far as the note goes, this being a very marked point of specific difference in all the ring-necked species of *Turtur* I have seen alive.

The common wild Turtle-Doves are frequently to be seen for sale—*Turtur suratsensis*, *T. cambayensis*, *T. risorius*, *T. orientalis*, and *T. tranquebaricus*. Mr. Rutledge once gave me a very peculiar albinoid cream-coloured male of the last species. *Chalcophaps indica* and *Geopelia striata* are also often to be had, and *Calenas nicobarica* is pretty commonly imported.

Of the Fruit-Pigeons, the "Hurrial" (*Crocopus phainopterus*) is generally for sale in the Bazaar, and, more rarely, one may meet with the "Kokla" (*Sphenocercus sphenurus*), which, although much esteemed in some parts, is apparently not often kept in Calcutta. *Osmoteron bicincta* is common. *Carpophaga anea* and *Myristicivora luctuosa* are sometimes imported in considerable numbers, but cannot be called abundant. On a few occasions recently Mr. Rutledge has procured the lovely *Ptilopus jumbu*, and I once saw a splendid *Bulweron capellii* in his possession. Fruit-Pigeons are quite easy to keep, as they live well on any soft vegetable food, such as *saloo*-paste or boiled rice, and I wonder that the home dealers do not take more trouble to introduce these most exquisitely coloured birds.

On foreign Pigeons, the most frequently imported are *Ocyphaps lophotes* and *Phloganas luzonica*, not to mention the great Ground-

Pigeon alluded to above. Other species occasionally occur, such as *Leucosarcia picala*, *Phaps chalcoptera*, and *Geopelia cuneata*, while a short time ago a good many *Turtur chinensis* and *T. bitorquatus* are imported, especially the latter, which proved quite a drug in the market. Before leaving the Pigeons, I ought to record the curious fact that the Alpine *Columba leucophaea*, which Mr. Rutledge sometimes obtains, bears the heat perfectly well, and even shows a desire to breed. As its note has apparently not been recorded, I may mention that it is not a coo, but a repeated croak, not unlike a hiccough, and, much as the bird resembles the domestic Pigeon, I have never seen it sweep the ground with its tail when courting, but rather raise it.

GALLINÆ.

The *Phasianidæ* are usually regarded in the light of aviary birds, but as one of them is among the commonest species kept in confinement here, the family demands some notice.

FAMILY PHASIANIDÆ.

The Grey Partridge (*Francolinus pondicerianus*) is very widely kept for fighting, and in consequence is one of the birds most commonly seen in cages. Those used are small, with the interstices of the pyramidal top filled in many cases with string netting, to avoid injury to the bird's head. These Partridges, however, become so tame that they can be let out for a run, and I have seen one following its owner over the grass like a little dog.

The common Rain-Quails (*Coturnix communis* and *C. coromandelica*) are also occasionally kept in cages. The Pheasants, which are brought down from the hills for exportation, hardly come within the scope of the present paper, but it may perhaps be allowable to mention a few birds of this family which have long been imported for ornamental purposes, although they cannot be called cage-birds. These are the Java Peacock (*Pavo mulicus*) and the white and pied forms of the common *P. cristatus*, together with the "Japan Peacock" (*P. nigripennis*). Mr. Rutledge tells me that this form really does occur in Japan to his positive knowledge (no doubt introduced), and there is certainly a Japanese specimen of Temminck's in the Paris Museum. The Ring-necked Pheasant (*Phasianus torquatus*) and Silver Pheasant (*Genucus nyctemerus*) are frequently brought over from China, as is the Golden Pheasant (*Chrysolophus pictus*), the male of which often has a hen of *P. torquatus* assigned to him as a companion. The male Golden Pheasant occurs in the old picture to which I alluded at the commencement of the present paper, so that it may fairly claim to have been one of the earliest fancy birds exported from its own country.

THE END.

WILLIAM SWAINSON AND HIS TIMES.—XI.

BY THEODORE GILL, Washington, D. C.

(Continued from Vol. V, page 137.)

Fourth, he discusses at great length the proposition that characteristics of the third primary divisions of each circular group are repeated in the others, and this proposition is practically declared to be original. He declares (p. 241).

"Upon this generalisation we have not been enabled to receive any assistance from the labours of our predecessors, since we are not aware of its having hitherto been hinted at".

He devotes a long chapter ("Chap. ii"—pp. 241-266) exclusively to this proposition. He precludes (p. 242):—

"I. The first distinction of TYPICAL groups is implied by the name they bear. The animals they contain are the most perfectly organized: that is to say, are endowed with the greatest number of perfections, and capable of performing, to the greatest extent, the functions which peculiarly characterise their respective circles. This is universal in all typical groups; but there is a marked difference between the types of a typical circle, and the types of an aberrant one. In the first we find a combination of properties concentrated, as it were, in certain individuals, without any one of these preponderating, in a remarkable degree, over the others; whereas in the second it is quite the reverse: in these last, one faculty is developed in the highest degree, as if to compensate for the total absence, or very slight development, of others".

It is noteworthy that Swainson considered the Crow as the "type of types" among birds, and in this respect, his views are shared by some eminent naturalists who, nevertheless, would energetically repudiate his peculiar reasons for so thinking and his line of argumentation. His reasons are thus stated (p. 243).

"Let us exemplify this proposition by familiar instances. The Crow has been most truly considered the pre-eminent type of all birds,* it is also the type of a typical circle. It consequently unites, in itself, a greater number of properties than are to be found, individually, in any other genus of birds; as if, in fact, it had taken from all the other orders a portion of their peculiar qualities, for the purpose of exhibiting in what manner they could be combined. From the rapacious birds this "type of types," as the Crow has been justly called, takes the power of soaring in the air, and of seizing upon living birds like the Hawks, while its habit of devouring putrid substances, and picking out the eyes of young animals, is borrowed from the vultures. From the scansorial or climbing order it takes the faculty of pecking the ground, and discovering its food when hidden from the eye, while the Parrot family gives it the taste for vegetable food, and furnishes it with great cunning sagacity, and powers of imitation, even to counterfeiting the human voice. Next come the order of waders, who impart their quota to the

perfection of the Crow, by giving to it great powers of flight, and perfect facility in walking, such being among the chief attributes of the grallatorial order. Lastly, the aquatic birds contribute their portion, by giving this terrestrial bird the power of feeding not only upon fish, which are their peculiar food, but actually of occasionally catching it.† In this wonderful manner do we find the Crow partially invested with the united properties of all other birds, while in its own order—that of the *Insessores*, or perchers—it stands the pre-eminent type. Here, then, is an example of the characteristic properties of the type of a typical circle".

The sub-typical group is next explained (p. 245).

"II. SUB-TYPICAL groups, as the name implies, are a degree lower in organisation than those last described; and thus exhibit an intermediate character between typical and aberrant divisions. They do not comprise the largest individuals in bulk, but always those which are the most powerfully armed, either for inflicting injury on their own class, for exciting terror, producing injury, or creating annoyance to man. Their dispositions are often sanguinary; since the forms most conspicuous among them live by rapine, and subsist on the blood of other animals. They are, in short, symbolically the types of *evil*; and in such an extraordinary way is this principle modified in the smaller groups, that even among insects, where no power is possessed but that of causing annoyance or temporary pain, we find, in the sub-typical order of the *Annulosa* (*Aptera* Lin.), the different race of scorpions, *Acari*, spiders, and all those repulsive insects, whose very aspect is forbidding, and whose bite or sting is often capable of inflicting serious bodily injury. If, again, we look to the sub-typical groups of quadrupeds and of birds, this *principle of evil* is developed in the highest degree; both are armed with powerful talons, both live on slaughtered victims, and both are gloomy, unsocial, and untameable".

Swainson had incidentally in the volume now under notice and elsewhere considered the so-called Aberrant groups or circles, and proceeds to epitomize his conclusions in the following manner (p. 249).

"The characters belonging to ABERRANT groups, when viewed as a *whole*, for reasons already given, are too varied to admit of general application, further than that they depart much more from those which belong to pre-eminent types than these latter do from the subtypical. It will, therefore, be necessary to consider aberrant groups as naturally divided into three distinct types".

He "for the present, names the three types after groups he had recognized in ornithology

*Linn. Trans. vol. xiv. p. 445.

†Wilson's American Ornithology article Fishing Crow.

and called *Aquatic, Suctorial and Rasorial*. The *Aquatic* or *Natorial* types are primarily exemplified by the Natatores or web-footed swimming birds; the *Suctorial* by the Grallatorial or long-billed wading birds, and the *Rasorial* by the Rasores or Gallinaceous birds. Each of these types, it is contended, is represented analogically in every other circular group, and this mode of representation is exemplified in a table giving five categories of different taxonomic values (p. 253). It is reproduced with the author's triumphant introduction.

"Now, to prove that these examples are not taken at random, but are actually supported by analysis, we shall place before the reader a table of the aberrant types of some of the groups we have here intimated:—

Aberrant Group of the

Series of Quadrupeds	Series of Verte- brata.	Series of the Pachydermata.
Ungulata.	Reptiles.	Megatherium.
Glires.	Amphibia.	Hyrax.
<i>Cetacea.</i>	<i>Fishes.</i>	<i>Hippopotamus.</i>
Series of the Rasores.	Series of the Ptilota.	
Guan.	Hymenoptera.	
Pigeon.	Coleoptera.	
<i>Ostrich.</i>	<i>Neuroptera.</i>	

Fifth, our author enters upon his final proposition by a restatement of it, but with the caution (266) that "the full demonstration of this law would obviously require an analytical exposition of the whole number of circles here mentioned; which, to do thoroughly, would in itself require a volume."

Space can only be afforded to the summary of these groups which follows the long explanatory remarks (p. 268, 269).

"The animal kingdom, then, may be presumed to contain nine different ranks or gradations of circular groups, commencing with the highest, and terminating with the lowest assemblages. These groups have received the following names, which at once indicate their relative value: 1. Kingdom; 2. Sub-kingdom; 3. Class; 4. Order; 5. Tribe; 6. Family; 7. Sub-family; 8. Genus; 9. Sub-genus. This latter is the lowest description of circular group hitherto detected in nature: for although, when a sub-genus is very perfect, it sometimes contains the five types of form common to *all* circular groups; yet, as we have just observed, no instance has yet been pointed out, wherein each of these types is also circular".

Such is the "philosophy" which, as Swainson truly claimed, was received at some time or other, with more or less cordiality, by almost every English naturalist that flourished in the third and fourth decades of the century lately closed.

Doubtless the original cause of the view that the constituents of each group of animals were represented in every other group resulted from the dim appreciation of the fact that in many groups there is a deviation, from the normal members, of some representatives in various physiological characters and adaptations,

such as kind of food, manner of procuring it, and greater love and aptitude for aquatic life. On such a precarious foundation was erected the fantastic superstructure of the circular and quinary philosophers!

The philosophers limited the circles to nine. Swainson expressly tells us in the Treatise (p. 272) that nine is the limit. The nine are the (1) kingdom, (2) subkingdom, (3) class, (4) order, (5) tribe, (6) family, (7) subfamily, (8) genus, (9) subgenus. He thought, indeed, that there was some possibility that "the species composing these little assemblages" called subgenera might "present us with representations of those primary types of forms already defined" but admits that he had "not yet been able to detect any circular groups below the rank of subgenera".

In most of the reviews and journals of the day, the "Preliminary Discourse" and the "Treatise on the Geography and Classification of Animals", as well as succeeding volumes, were cordially welcomed and highly extolled, and their author sometimes hailed as the greatest of naturalists. Nevertheless, there were exceptions even in those days. Swainson's reasoning was rightly appreciated by some in his own time. For example, in a review of the "Preliminary Discourse" in the *Athenaeum* for November 2, 1834 (p. 796), the writer gives selections from the work picturing certain analogies and in strong but true terms affirms "that the reasoning is absurd, the analogy ridiculous, and the whole comes nearer what is commonly designated 'twaddle' than we had reason to expect in a work which modestly professes 'not only to stimulate the diffusion of knowledge, but to raise the tone of the public mind, and to awaken a taste for the contemplation of the works of nature'". The reviewer aptly indicates that the analogies of Swainson may remind one of "Fluellin, in his celebrated *analogy* between the rivers in Monmouth and Macedon. 'Tis so like as my fingers to my fingers; and there is salmon in both'".

Such criticism, however, was quite exceptional and, as Professor Alfred Newton has remarked, (in *Encyclopædia Britannica*, xviii, 14.) the Quinary System "for some years seemed likely to carry all before it". Newton adds that "the success it gained was doubtless due in some degree to the difficulty which most men had in comprehending it, for it was enwrapped in alluring mystery, but more to the confidence with which it was announced as being the long-looked for key to the wonders of creation, since its promoters did not hesitate to term it the discovery of 'the Natural System', though they condescended, by way of explanation to less exalted intellects than their own, to allow it the more moderate appellation of the Circular or Quinary System".

In several places Swainson named some of the prominent English naturalists who had adopted the circular theory and in the first volume of the work on birds (p. 200), in a forecast of the triumph of his views, he claims, "In the writings of such labourers, in the different departments of zoology, as M. M. [Mm.] Bennett, Owen, Ogelby [Ogilby], Westwood, Doubleday,

Walker, Halliday, Gray, Gould, and many others, we already see those who will become worthy successors to such veterans among us as were 'first in the race:' who have more or less contributed to lay the foundation-stone of philosophic classification, or who have already 'won, and passed away.' And if we refrain from mentioning others whose talents are no less promising, it is only because they are wisely employed in that preparatory study which is essential to the real advancement of our favourite science, and to the acquisition of any fame that is to be permanent".

Swainson's claim was really justified by the facts, even if his prevision was not. All the eminent naturalists named by him did really accept it, or at least experiment and toy with it for a time, but sooner or later all dropped it.

American naturalists did not copy their British brethren in even temporary adoption of the theory with two exceptions. Those exceptions, however, were notable; they were S. S. Haldeman and John Cassin, excellent naturalists; they toyed with it for a time but soon abandoned it. The continental naturalists left the theory severely alone, for we must not confound with it the quinary schemes of Oken, Kaup and a few others. While theirs were almost as fantastic; they were one or two degrees less so.

In after years, the system was little noticed. The great naturalist of the middle of the century, Professor Agassiz, in a history of classification in his "Contributions to the Natural History of the United States" (i. 219), was one that did refer to it. Swainson's summary of MacLeay's system of circular classification given in his "Treatise" (pp. 201-205) is quoted and the concluding paragraph of that summary is here reproduced with the terse judgment pronounced by Agassiz.

MacLeay's views on the classes of Vertebrates are taken as illustrative. Its classes are five and describe a circle. Swainson argues "does that form a circle of itself? Yes; because it is intimated that the Reptiles (*Reptilia*) pass into the Birds, (*Aves*), these again into the Quadrapeds, (*Mammalia*.) Quadrapeds unite with the Fishes, (*Pisces*), these latter with the amphibious Reptiles, and the Frogs bring us back again to the Reptiles, the point from which we started. Thus, the series of the vertebrated group is marked out and shown to be circular; therefore, it is a natural group. This is an instance where the circular series can be traced"! Well did Agassiz remark, "the writer that can see that the Quadrapeds unite with the Fishes, and the like, and yet says that Cuvier 'was totally unacquainted with the very first principles of the natural system', hardly deserves to be studied in our days".

Agassiz, in his historical sketch, did indeed concede that "the great merit of the system of McLeay [and Swainson], and in [his] opinion it has no other claim to our consideration, consists in having called prominently the attention of naturalists to the difference between two kinds of relationship, almost universally confounded before; *affinity* and *analogy*". It appears to me, however, that Swainson at least went further than almost any other zoologist has

done in confounding what are now known as affinity and analogy, and juggled with those terms to the confusion of himself as well as the subjects he treated of.

The basis of these views had been appreciated long before. The fact that different types of animals might have representatives fitted to fulfil analogous functions had long been recognized. Among the many expressions to this end is one of Latreille's: "La Nature en général a un certain nombre de modèles qu'elle reproduit avec des modifications, dans tous les classes, et même dans les ordres". (H. N. xi, 51.)

It has been already declared that Swainson's own words have been given for his propositions in order to avoid the charge of misrepresentation as well as of want of clearness. Doubtless many a student of his works has read again and again paragraphs of his writings to obtain an idea of his meaning and some may have attributed their want of comprehension to their own dullness. The unintelligibility is, however, innate in the Quinary System. There is no objective reality but only subjective hallucination. The system was the result of a yearning for something more than mere lists of species. In the laudable search for laws governing animated nature, accidents of observation and false analogies occurred to the originator and led to his concept of circularity and quinaryism and that same yearning led to the eager adoption of his views by others. It does not seem to have occurred to them to inquire what they meant and *how* animals were arranged in circles. They seem, indeed, to have imagined something like a Creator or God who had an ideal pattern set up, worked his ideas into such circles, and manifested his creative designs by repeating the same ideas in circle within circle -- up to the ninth power! Ridiculous as such a conception is, how else can we explain its development? Some of these circles within circles were declared to be complete "perfect" was the word and no forethought of the immense additions that paleontology was to yield occurred to them. (Swainson, be it said, especially taught that the extinct forms were to be considered with the existing in the same system.) The yearning after some generalization covering the animal kingdom was a natural instinct and was destined in later years to be administered to by the discovery of the laws of Evolution and the demonstration of one of its processes by another distinguished Englishman. Evolution, indeed, had been to some extent appreciated long before the days of MacLeay and Swainson, but its possibilities were admitted by very few and it was looked upon by many good men with abhorrence, and among them was the "philosophic Swainson".

The philosopher had no respect for the hypothesis of development and rejected it without ceremony. In reference to Lamarck, he did "justice to his memory", but urged that "we must reprobate those atheistical theories which he has introduced in his writings-- theories which are inconsistent with his own words, and which are too ridiculous even to be repeated". In a later and more matured allusion to the "various theories Lamarck formed on many of

the great phenomena of nature", he expressed the opinion that "his speculations on these subjects may be briefly characterized, not merely as fanciful, but absolutely absurd; leading in some instances, if legitimately followed out to their conclusions, to consequences of a very pernicious tendency".* Swainson, indeed, was a typical believer in special creation!

But in those "good old days" (happily passed?) when some one or other was constantly on the lookout for heresy lurking in every publication, even Quinarians were not exempt from suspicion. One pointed out that "the doctrine of types, passage, and aberration indeed, seems only another version of the visions of Epicurus, Robinet, [Erasmus] Darwin, and Lamarck; for in the Quinary system we find the very language of the latter theorists", etc. Thus, "though religious feelings have hitherto stood prominent in the school, it certainly appears calculated to be turned to the worst purposes of the Sceptic".†

We may now dismiss the "circular theory" and some may think we have already given it too much attention. So far as its merits are concerned, we at once admit the charge. But the consideration of mental aberrations and diseases, and especially of psychological epidemics, is to many of as much interest as physical epidemics and to some more so, and the prevalence for a time among otherwise good naturalists of such a hallucination as the "theory" in question is certainly an interesting phase of biological history. For this reason we will hope for pardon from those who may think we have given it undue consideration.

THE GEOGRAPHY OF ANIMALS.

Swainson had contributed to Murray's "Encyclopædia of Geography", a general systematic work published in 1834, numerous paragraphs on the geographical distribution of Man and Animals. Those paragraphs or sections were arranged under the heads of continents and prominent countries, and similar views were published in the work now under consideration.

The first part of Swainson's "Treatise on the Geography and Classification of Animals" is really quite notable and approaches much nearer to modern ideas than does the other parts. The most general view respecting the distribution of animals in the first half of the century was that they should be grouped in zones determined by temperature. Swainson entirely departed from this method and made his great geographical combinations of animals coincident rather with the generally recognized continents, but by no means entirely so. After a review of some of the attempts at zoogeography made by predecessors and the difficulties in the way of expressing the facts of distribution, he gives his own views in the following propositions (p. 14).

"Since, then, there is as marked a distinction between the animals of the great continents as there is between the races of mankind by whom

they are inhabited, it remains to be considered whether the general distribution of both are not in unison? Whether their DIVINE CREATOR has not, by certain laws, incomprehensible to human understanding, regulated the distribution of man and of animals upon the same plan? These questions led us to the following propositions:—

"1. That the countries peopled by the five recorded varieties of the human species, are likewise inhabited by different races of animals, blending into each other at their confines.

"2. That these regions are the true zoological divisions of the earth.

"3. That this progression of animal forms is in unison with the first great law of natural arrangement, viz. the gradual amalgamation of the parts, and the circularity of the whole".

After comments on the races of mankind, he applies his propositions to the distribution of animals in the following terms (p. 16).

"In attempting, therefore, to give a more accurate definition to the foregoing divisions, we are compelled to fill up the outline, at the best with diffidence, and, in some cases, by conjecture. The following, however, may be regarded as some approximation to the truth. 1. The European or Caucasian range includes the whole of Europe, properly so called, with part of Asia Minor, and the shores of the Mediterranean; in Southern Africa the zoological peculiarities of this region begin to disappear; they are lost to the eastward of the Caucasian mountains, and are blended with those of Asia and America to the north. 2. The Asiatic range; comprehending the whole of Asia east of the Ural mountains, a natural and well-defined barrier between the two continents. The chief seat of this zoological region is probably in central Asia; its western confines blend into the European towards Persia, and disappear on the west of the Caucasian chain; it is united to the African range among the provinces of Asia Minor; and is again connected with Europe, and also with America, by the arctic regions of the three continents; finally, its most southern limits are marked by the islands of Java and Sumatra, where the zoological character of the Australian region begins to be apparent. 3. The American range. United to Europe and Asia at its northern limits, this range or province comprehends the whole of the New World; but into which it blends at the other extremity is uncertain. 4. The next includes the whole of Africa south of the Great Desert; a part, at least, of the countries bordering on the Mediterranean exhibit a decided affinity to the European range; while the absence of large animals in Madagascar, and the presence of genera peculiar to New Holland and the extreme point of Southern Africa, lead us to the fifth or the Australian range. 5. To this range nature has given peculiar characters, both in regard to its geographic situation and to its animal productions.

(To be Continued.)

*Taxidermy and Biography, p. 220, 1840.

†Rennie Ornithological Dict. B. Birds, 2d ed., p. x, 1831.

THE OSPREY.

An Illustrated Magazine of Popular Ornithology.

Published Monthly.

By

THE OSPREY COMPANY.

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Comments.

THE VICE OF EXCESSIVE GENERALIZATION.

The monograph of the Osprey was finished in the last number of the journal named for it. The author had noticed discrepancies in the accounts of the bird given by different writers, and it was to ascertain to what extent such discrepancies range that the monograph was undertaken. The discrepancies are not exceptional except perhaps as to number. The best biographies of birds, concerning which much has been written, differ more or less from each other in important points. In the case of the Osprey, these differences extend to almost all points of the economy; as to whether they congregate in one place or not in Europe (p. 27); as to disposition, whether it is peaceable or not (see p. 27); as to whether they will take dead fish or not (p. 42); as to time of taking meals (p. 41); as to food, whether they depend entirely on fish or resort to other quarry (p. 60); as to whether they will attack poultry or not (p. 60)

as to what they will do after a meal (p. 60); as to whether they will pair for life or for a season only (p. 60); as to place of nesting (p. 73); as to composition of nest (p. 76).

These are only some of the matters of detail respecting which there has been difference of opinion. One author has positively asserted a certain proposition; another, one directly in opposition. The fault is in the assumption that what is true for one is true for all the representatives of a species. No allowance is made for deviations of individuals from the customary habits of the species. Nevertheless, such deviations may result from volition or simple whim as well as from the stress of circumstances. We may be assured, for example, that a bird would rather eat than starve, and if an Osprey cannot get a fish, he will get a reptile or a frog, if one comes in the way, rather than lose a meal altogether or starve. He may even take another bird—if he can. Sufficient consideration is not given to effects of environment and conditions when our observers strenuously dispute the allegation of some one who has observed or, let us say, claims to have observed something that another has not. It is a vice of over-generalization and of excessive belief in the uniformity and constancy of nature.

The sportsman—the hunter after game birds and mammals—is more prone to such dogmatism than the professional naturalist. The periodicals devoted to sports of the woods and fields are full of controversies respecting the habits of game animals and the assertion of some one respecting a peculiarity he has observed is disputed by another because a characteristic of the like kind has not been noticed by himself. After all, however, we ought not to blame the disputant too much, for a spirit of skepticism and criticism is really not only useful, but indispensable. But the objection to a given statement should not be too positive unless there is the best reason, not only within the experience of the objector but in that of many others, for believing that the statement in question cannot be true and may result from deliberate falsification or error of observation. In fine, skepticism is a good quality but should not be carried to an extreme. The representatives of a given species of animal agree in most respects and generalization is quite permissible. At the same time, there is not only individuality among birds and other animals, but exceptional conditions may result in the manifestation, by an animal, of a peculiarity very different from its normal habit,

Notes.

A SETTLEMENT OF WILD GEESE IN BRONX PARK, N. Y.—The descent of a flock of Wild Geese into the second most populous city of the World and their indefinite sojourn therein are of sufficient interest to justify permanent record. The data have been embodied in an interesting article in *The Sun* of New York, which is here reprinted. —EDITORS.

A flock of nine Wild Geese, floating about on the surface of an artificial pond, undisturbed by the sight of human beings on its shores, is the novel sight to be observed by the visitors to the Zoological Gardens in Bronx Park these days, and it is a sight the like of which, say those versed in the ways of wild birds, could not be found elsewhere in the world. It is a sight which has brought in numbers those who delight in natural history to the edge of the little pond to gaze at the spectacle with unconcealed surprise, and their exclamations of astonishment are as nothing to those of sportsmen who have gunned for Wild Geese and know to what extent their skill has been required to get within a hundred yards of these shy birds. Not two weeks ago the Wild Geese, which now swim about the little pond, unmindful of the sounds of human industry with which that part of Bronx Park now resounds, were flying over the frozen fields and marshes of Labrador, starting at the slightest sound and alighting only in places not reached by civilization. That these birds in the course of their annual migration to warmer latitudes south should see fit to drop quietly down in a zoological garden of all places, and there remain with perfect equanimity, is something that has completely mystified those who have made long study of their habits. Many sportsmen have absolutely refused to believe the geese were wild until told of all the circumstances of their arrival and what has happened since. Six of the geese are now in captivity, which means that they have had their wings clipped, thus cutting them off from all chances of soaring with their fellows. The other three, which include the gander that for some reason was rash enough to lead his flock astray, could not be lured into captivity by the artifices of the keepers and still float about the pond, impatient to proceed on their way south, but unable apparently to comprehend the inability of the six others to make the start with them. That they remain in due, the ornithologists say, to the strange affection which the members of a flock hold for each other.

Bronx Park has always had a flock of geese and they are what are termed Wild Geese, for the reason that although many removes from their ancestors who roamed fancy free, yet they still retain many of the characteristics which distinguish Wild Geese from the common domestic ones. Heretofore it has been considered almost impossible to obtain any number of wild geese in the first generation. Those seen in Zoos all over the world are sometimes bred from the eggs of robbed nests or from birds captured while wounded, but in most cases they are several generations removed from their wild ancestors.

Twenty-five geese of this kind comprised the collection at the Zoological Gardens until November 7, when the real wild geese made their appearance.

Wild Geese pass the winter in the south, and these days flocks of them can often be seen flying in that direction. It has been observed that the birds, whose home, strictly speaking, is in the temperate zone of Canada, go as far south as Florida, but those who live in the Arctics seldom go so far south. It is the opinion that the flock now in Bronx Park came from Labrador and was consequently near the end of its journey. Wild Geese fly sometimes as high as half a mile and make on an average of 200 miles a day. The Wild Geese now in the park arrived in the night. One of the keepers found, when he went to feed the twenty-five park geese, that instead of that number there were thirty-four on the pond. When he imparted this information to C. W. Beebe, the curator of birds, the latter didn't know whether to believe it or not. Mr. Beebe has been studying birds and their habits for years. Not only has he been studying wild geese, but he has tried to shoot them with little or no success. Consequently when told that a flock had chosen a zoological garden as a resting place he refused to accept it until he had seen for himself. On the pond, however, he found the newcomers led by a magnificent gander.

This gander has been the wonder of all who have seen him. From tip to tip his wings measure five and a half feet and on land he stands a giant among the others, overtopping by a good deal the gander that has heretofore been the undisputed sovereign of the pond. Like the geese that have always been in the park, the newcomers have backs of a greyish brown, with white bellies and throat and cheeks. Their necks are a beautiful glossy black. When first observed in the early morning the Wild Geese led by the gander, which almost resembles a swan, were having very little to do with the other geese which had probably been the cause of their selecting the pond as a resting place when they saw it from above with its population peacefully feeding. When they made this discovery it was an hour when no keepers or visitors were visible and hence it has been reasoned out that they were moved to alight. Mr. Beebe and the keepers expected that at any moment the visitors would rise and resume their journey, but they were wrong. Instead the gander led his flock hither and thither, occasionally going up to the regular inhabitants of the little pond and then moving away again with an air of superiority. All the time the Wild Geese kept uttering their peculiar cries and now and then flapping their wings and rising a little way from the water. Every time they did this those who watched them expected they were about to disappear, but they always returned.

When it came time for the other geese to be fed, to the surprise of all, the wild geese under the lead of the big gander after waiting for a while and looking carefully over the ground decided to share in the meal and then for the first time the two flocks mingled. But this was not

for long for when the Wild Geese had had their fill their leader led them off again, his little flock following him in perfect order. Mr. Beebe was astonished at the way his flock had been increased, but his astonishment was greater when the day wore on and the usual visitors came to the shores to watch the geese without producing any commotion among the Wild Geese. All day long he and the keepers kept their eyes on the pond just to note what did finally move the gander to call his flock and head for the south again but the expected did not happen. For two days the Wild Geese sailed about the pond at perfect liberty, enduring the gaze of visitors and seemingly undisturbed by it. Unlike the other geese they did not do much walking on land but kept either in the water or on the bank which the visitors do not have access to.

When Saturday came and the visitors showed no sign of departure, Mr. Beebe decided on a bold experiment. His plan was to try and capture them, for even one wild goose as a permanent guest would be a valuable acquisition to the collection and make it a unique one. With his assistants he rigged up a wire cage on the shore, 8 x 15 feet in size. Inside this he made a smaller cage and in this he put two of his tame geese with plenty of food. The outside cage was made with a door which the pull of a cord would close. An assistant was stationed a hundred feet away and at a signal from those watching the geese he was to pull the cord. It was a long time after the Wild Geese discovered the cage that any of them could be induced to enter, but this was perhaps because the tame geese with their superior knowledge of the artifices of man would not go near the cage. The big gander of the wild flock whom the men about the Park named McKinley because he arrived on the morning after election, after looking the cage well over, finally ventured in. He got about a foot inside and then something excited his distrust and he made a precipitate retreat. This happened several times. Finally, after two hours' waiting, Mr. Beebe and his assistants finally saw the big fellow enter and proceed to pick up food very cautiously at first but gathering reassurance as he enjoyed the meal. His flock, seeing him satisfied, followed and six of them went in farther than he did. The gander with two of his flock kept near the door and their alertness was shown when at the first pull of the cord they were up and away, leaving their six mates prisoners. When the gander discovered that those could no longer follow him he was furious and sailed up to the cage flapping his wings and making his peculiar cry. The wings of the six captured ones were clipped and they were turned loose.

Then a very peculiar thing was observed to happen. Instead of joining their own flock the captured ones after a short time accepted the leadership of the other gander and took their places in his flock. Since their capture they have been seen always with the flock of tame geese and never with their three old companions who are still free to fly away much to the regret of Mr. Beebe and the helpers. The reason for this change of allegiance on the part of the six

wild geese whose wings have been clipped, Mr. Beebe says, lies in the fact that they found themselves unable to keep pace with the movements of the wild gander and hence joined the geese whose wings had been clipped and with which they were always sure of keeping up. But the wild gander has not accepted the change yet. Wherever his six former followers are he will now and then paddle up to them and with a great fluttering of his wings and an air-splitting "honk" he will rise in the air followed by the two uncaptured ones. The six each time this happens make desperate efforts to rise, too but all to no purpose. High in the air the gander will sometimes go and circle around but when he sees the others do not follow him, he always returns, often to try the same performance all over again. The other two free geese still at liberty keep him company and hold aloof from the others except when their leader is trying to reclaim his lost followers. Then they add their shrieks to his and do all in their power to encourage by their example the six unfortunate ones.

Mr. Beebe is of the opinion that the gander and the two geese will stay by their friends until they hear the cries of another flock passing overhead and then, realizing that their old companions are lost, they will be off to the southward.

Mr. Beebe says the gander is worth all the others captured and a good many tame ones as well, and determined efforts are still being made to capture him. There is no chance of doing this by means of the cage, for ever since his experience in that he has refused to go near it. Some of the men who care for the fowls have had experience in snaring birds, however, and they are going to try to get Mr. McKinley and his remaining followers in this way. Their plan is to lay about 300 snares for them. It is believed the capture will be accomplished provided another flock does not entice them away before the snares are ready. Mr. Beebe said the other day that the capture of the wild geese would mean that the geese in the Park would be for years the finest anywhere, for the reason that they would hatch more eggs and their goslings would be as fine as themselves.

ON THE LONGEVITY OF THE GULL. By Theodore Gill, Washington, D. C. In the *OSPREY* for June, 1899, is the reprint from the *Ibis* of a long article "on the comparative ages to which birds live" by Mr. J. H. Gunney. Gulls are therein (pp. 146, 154) mentioned which had attained ages ranging from 21 to 44 years. Several other instances of longevity and partial domestication of individuals of that group have been elsewhere recorded. An interesting instance illustrative of longevity, as well as the extent to which they may be familiarized, was published over a century ago, and was met with incidentally during the examination of the volume for another purpose. It was in an article "on the longevity of animals" in 'The American Museum' of Philadelphia for the year 1792, (vol. 12, pp. 208-209). The article was only subscribed "J. A." and its value is materially impaired by the fact that places and dates are not mentioned,

but it bears on its face the evidence of good faith and veracity, and seems to be of sufficient interest to be exhumed for the benefit of the present generation.

The bird appears to have lived for considerably over 40 years, and commenced its career in the first half of the eighteenth century.

Twenty-two specimens of a Kittiwake Gull (*Rissa tridactyla*) were marked with a "J" and liberated in Franz Josef Land in 1896. (See *Ibis*, 1898, pp. 268, 171; *OSPREY*, 1899, p. 147.) We are not aware that the finding of any of them has been recorded.

"A great many years ago, a gentleman caught a fine Gull (vulgo a fea maw,) whose wings he cut, and put it in his garden, to clear the slugs and other vermin of that sort. The bird remained in that situation for several years; and being kindly used, it became very familiar, so as to come, upon a call, to be fed at the kitchen door. It was known by the name of Willie. This bird became at last so tame, that no care was taken to preserve it; and its wings having grown to full length, it flew away, joined the other Gulls upon the beach, and came back from time to time to pay a visit to the house. It followed its companions, however, when they left this country; at which the family were much disconcerted. To their great joy, however, it returned with them the next season; and with its usual familiarity returned to its old haunt, where it was welcomed with great joy, and fed very liberally with the garbage of fish, its favourite food. In this way it went and returned for forty years without intermission, and kept up its acquaintance in the most cordial manner; for, while in the country, it visited them almost daily, answering to its name, like any domestic animal, and ate almost out of the hand. One year, however, very near the period of its final disappearance, Willie did not pay his respects to the family for eight or ten days after the general flock of Gulls were upon the coast; and great was the lamentation for his loss; as they naturally concluded he must be dead. The gentleman from whom I had this fact, happened to be there on a visit at that time, and was witness to and cordially joined in their regret. But to the great joy of the whole family, a servant came running into the room one morning, while they were at breakfast, in ecstasy, calling out that Willie had returned. The whose company got up from the table im-

mediately, to welcome Willie, and the humane guest among the rest. Food was soon found in abundance; and Willie, with his usual frankness, ate of it heartily, and was as tame as any barn-yard fowl about the house. In a year or two afterwards, this graceful bird discontinued his visits for ever, so that they concluded that he must be dead; but whether of old age, or from accidental causes, could never be ascertained. I did not learn that they discovered any symptoms of decrepitude or decline in this animal, seemingly the effects of age".

AN OUTWITTED KINGBIRD. While taking a spin on the Aqueduct road, July 4, 1897, I noticed a Cicada leaving a tree to cross the Potomac. It had only proceeded a short distance when a Kingbird gave chase. Just as the bird was on the point of capturing the insect the latter gave forth that sound so characteristic of the species, startling the Kingbird and thus gaining several feet before the bird continued his pursuit. This performance was repeated a number of times and enabled the Cicada to regain the shelter of the same tree which it had left a few moments before.

His Kingbirdship was outwitted for once.
BARTSCH.

A DELAYING KINGFISHER.—In the editorial of *THE OSPREY* for September it was stated that the name *Carcinectes*, applied to a peculiar oriental genus of Kingfishers, should give place to *Lacdo*. In the *Popular Science Monthly* for November the generally accepted name is used for the typical species of the genus *Lacdo melanops*. In an article on "the Omen Animals of Sarawak" by Prof. A. C. Haddon, it is stated that the bird called 'Membuas' in Borneo, which "lives in the jungle, is not a particularly lucky bird. If, when they are making a trap, the Ibans hear the long, mournful whistle of the 'Membuas,' they know that, although the trap will catch things, it will only be after an interval of ten to fourteen days that they will have any luck. On other occasions it is not unusual for them to catch little partridges, such as *Rollulus roulroul*, directly they have set up the trap, but often, under ordinary circumstances, it will be a day before they catch anything."

The lack of luck, by the way, is not to the detriment of the bird but to that of the man!

Letters.

FOWL HYBRIDS AND VANISHING BIRDS.

SWANWICK, Ill., Sept. 28, 1901.

EDITORS OF THE OSPREY:

I send herewith two notes which may be of interest.

First, in reference to the "Curiosity" mentioned on page 128 of the August number of the *OSPREY*.

Some twelve or fifteen years ago, in pursuance of my pastoral work, I called at the house of a widow lady who lived in the "timber" (this is a prairie country) some distance from my home.

When about to depart, she said, "stop a minute. I want to show you some odd fowls". I followed her to the barn-yard, where she showed me two of the strangest fowls I ever saw. They were a cross (hybrid) between a "chicken" and a "guinea". She said that a rooster was whipped by another, and that he took up with the guineas and went with them, and that these fowls were hatched from guinea eggs. I cannot now give the description of them, but if you can get a specimen from West Virginia, by all means do so, and you will see a genuine "Curiosity".

Second. On page 109 of the OSPREY for July, under the title, *Vanishing Bird Races*, I find this statement: "The White Pelican is a tradition only, like the Dodo". On page 116 of the August OSPREY, near top of second column, this occurs: "Large flocks of Gulls and American White Pelicans, which evidently do not breed here". (I omit technical names.)

How reconcile these two statements? or is the American White Pelican a different bird from the one referred to on page 109?

Answer thro' the OSPREY.

Let me say, before closing, that I have greatly enjoyed your descriptions of bird-life as published from time to time.

Yours very truly,

J. C. ELLIOTT.

ANSWERS.

1. The hybrid between the Guinea and barnyard fowls has been described more than once. Our correspondent will find in the OSPREY for September, 1899, the notice of an elaborate article on one by F. E. Beddard, published in the *Ibis* for July, 1899. Mr. Beddard found that the skeleton and windpipe were "perfectly intermediate" between those characteristic respectively of *Numida* and *Gallus*.

The apparent readiness with which two such distantly related birds mate and propagate is remarkable. Specimens are not very rare; there are half a dozen in the United States National Museum from various places, one coming from Cuba.

In 1897, Dr. Juan Vilaro, in the Bulletin of the American Museum of Natural History (ix, 225-230, pl. 25, 26), published notices of six such hybrids and figures of four raised in Cuba which he had owned. Four are preserved in the American Museum. All had cock fathers and guinea mothers.

Dr. Vilaro has given some interesting notes on the peculiarities of these birds which we take the liberty of republishing.

"In life these hybrids had only one phonetic expression—a single chirping sound, which might be taken either as a complaint, a war-cry, or as a manifestation of fear. These were the only emotions which called forth the sound. It had not the least resemblance to the various notes or cries we are accustomed to hear from gallinaceous birds. It was rather like the creaking noise produced by vigorously rubbing together two pieces of iron. When thus agitated they erected the feathers of the head and neck,

and the tail. They generally, even when perfectly at rest, keep their mouths open, a sign of difficult, panting respiration.

"They were all distinguished, especially the first four that came into my possession, by a quarrelsome, aggressive disposition common to Guinea-fowls. They gave their companions of the poultry yard no peace, not respecting even the chief, to whom all but the hybrids gave respect. For this reason I was compelled to sacrifice them, one after the other. They never, however, attacked each other. On the contrary they frequently gathered in a group for the attack on other fowls, and even relieved each other when persecuting an enemy. Although all but one were found on dissection to be males, none of them had spurs."

A noticeable feature of the hybrid is that it is, frequently at least, larger than either parent and suggests origin from a Turkey rather than a Guinea fowl.

2. The two notices of the White Pelican relate to different and distant localities; one to Florida and the other to the Upper Mississippi Valley. Perhaps, however, the assertion quoted from the *Florida Times-Union* is an exaggeration of the fact that its numbers in Florida have been greatly reduced and that it has been exterminated in or deserted some localities. However, Mr. Ridgway, when in Florida, never saw a specimen or heard of its occurrence there in recent years.

BLUE BIRD NESTING IN BANK HOLE.

PORTMAN, S. C.

EDITORS OF THE OSPREY:

On April 26, 1899, while hunting for Rough-winged Swallow's nests along some low banks on the side of a small stream, I saw a Bluebird fly from a hole in a bank, about three feet above the surface of the stream and one foot from the top of the bank. Examining the hole I found a nest containing two young Bluebirds about a week old. Thirteen feet away in the same bank was a Swallow's nest just completed.

This is the only case of a Bluebird nesting in a bank which has come under my observation. There seemed to be no lack of dead trees with suitable cavities in them near by and I am puzzled why she chose this site: was it due to the Swallow's example?

The young were almost fledged on May 9th.

J. ROWLAND NOWELL.



NEST OF BALD EAGLE.

After Photo by W. H. Fisher, (see p. 176.)

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Original and Selected Articles.

SOME BIRDS OF THE KISSIMMEE VALLEY, FLORIDA. III.

BY WILLIAM PALMER, Washington, D. C.

61. WHIP-POOR-WILL. (*Antrostomus vociferus*.)

Found and heard occasionally in Hammocks.

62. RUBY-THROATED HUMMINGBIRD. (*Trochilus colubris*.)

I heard one at Orange Hammock on March 21.

63. KINGBIRD. (*Tyrannus tyrannus*.)

First one seen; March 18, at Orange Hammock. Common afterwards, especially in the swamps.

64. GREAT-CRESTED FLYCATCHER. (*Myiarchus crinitus*.)

Two seen; Lake Arbuckle, March 9, and Orange Hammock, March 13.

65. PHOEBE. (*Sayornis phoebe*.)

Quite common about the river.

66. FLORIDA BLUE JAY. (*Cyanocitta cristata florincola*.)

Fairly common in small flocks in the pines and thick Hammocks; abundant at Lake Arbuckle.

67. FLORIDA CROW. (*Corvus americanus pascua*.)

Common; readily distinguished from the common Crow by the more triangular outline of its bill. Notes and habits the same, except that one hears occasionally a harsh croaking series of notes (possibly an attempt at a song) which I have never heard made by the more northern bird. Two adult females measured 18.50 by 36.50 and 18.50 by 35.87.

68. FISH CROW. (*Corvus ossifragus*.)

Hardly as common as the above; but equally as fond of oranges; frequently seen flying off with his bill stuck into one. Not seen away from the Kissimmee.

69. FLORIDA RED-WINGED BLACKBIRD. (*Agelaius phoeniceus floridanus*.)

Very abundant about the river and canals. As compared with the males in abundance the females were perhaps as one to about twenty or

thirty. Young males of the previous season were not numerous and were moulting, a condition not seen in adults. A female was noticed for some time building a nest (the only one seen) on March 23. The nest was built about four feet above the water in a willow, and the male kept anxious watch from the tops of the highest branches near by. This male was an immature plumaged bird while dozens of finely plumaged males evidently unpaired, were feeding in the vicinity. An adult male taken February 28, has a streak of white feathers between both eyes and the base of the upper mandible. Two males measured as follows: Length 8.87 and 8.75 inches; extent 14.25 and 13.87. Two females measured 7.25 and 7.50 in length, and 11.50 and 12.12 in extent.

70. SOUTHERN MEADOWLARK. (*Sturnella magna ludoviciana*.)

A small dark bird quite different from the bird found about Washington, D. C., though I could detect no difference in the notes or habits except that it is extremely abundant and very tame, usually permitting an approach to about twenty feet, sometimes nearer.

71. FLORIDA GRACKLE. (*Quiscalus quiscula agleus*.)

Several small flocks seen in the pines.

72. BOAT TAILED GRACKLE. (*Quiscalus major*.)

An abundant, tame, and most interesting bird. Seldom seen away from the river, and always feeds in and about the water. The antics and alternate singing of several males, frequently on the same branch, one above the other, is an interesting feature of the bird-life of this region. With the bill pointing directly upwards, and the feathers of the head and neck except the throat, drawn tightly to the skin, the body in a crouched position and the wings partly extended, one of the birds will utter a

series of loud, discordant, yet in its higher notes, musical, medley of sounds ending with a harsh grating noise somewhat like the rustling of the feathers of a Peacock's tail. Then another takes up the song and sometimes a third and then the whole performance is repeated alternately several times to the evident satisfaction of the birds themselves. I never saw a female near by or taking the least interest in these exhibitions. The birds feed a great deal while walking on the floating leaves of the lily pads, even walking in the water, and picking up insects an inch or more under the surface. A very tame male frequented the river bank at Orange Hammock and I saw it daily searching for food at the water's edge. One day while it was wading in the water a bass snapped at it; it instantly jumped to a place of safety on the bank and eyed the commotion in the water for some time before making up its mind to retire altogether. The next day it returned to the spot and I watched it for some time. It walked along the bank looking for food as usual, but carefully refrained from wetting its feet. It kept this up for several days, then evidently forgot its previous fright, and when I left a few days later it was wading as carelessly as before. Nests began to be built about March 16. Fresh eggs were obtained on the 20. Some nests contained two eggs, one three, and most one or none. Most of the nests were built in the willows in small colonies of five or six, always over water and rarely more than five feet above it. One nest was found at the river's edge in the center of a bunch of sawgrass. Female birds were shy and far less numerous than the males. The five sets of eggs preserved show a very great diversity of both size and coloration.

73. YELLOW BIRD. (*Spinus tristis*.)

A few seen and heard occasionally.

74. SAVANNA SPARROW. (*Coturniculus sandwichensis savanna*.)

Common all over the low prairie region, and even seen in yards.

75. YELLOW-WINGED SPARROW. (*Coturniculus savannarum passerinus*.)

Occasionally found in the open pine woods.

76. CHIPPING SPARROW. (*Spizella socialis*.)

A few seen about a house near Lake Kissimmee.

77. PINE-WOODS SPARROW. (*Aimophila aestivalis*.)

A few were secured in the pines near Lake Arbuckle.

78. BACHMAN'S SPARROW. (*Aimophila aestivalis bachmanii*.)

I shot one in the pines March 10, near Lake Arbuckle.

79. SWAMP SPARROW. (*Melospiza georgiana*.)

Often seen in wet bushy places and generally solitary.

80. TOWHEE. (*Pipilo erythrophthalmus*.)

I took one specimen in a thick palmetto scrub at Lake Arbuckle on March 8, the only one seen.

81. FLORIDA TOWHEE. (*Pipilo erythrophthalmus allenii*.)

The common name of this bird is a misnomer as its irides are *not white*, but streaked yellowish with an ill defined reddish ring surround-

ing the yellow. A common bird, keeping itself well hid in the taller palmettos about the hammocks and swamps. At Orange Hammock I stood once for nearly ten minutes watching a female bird which perched, almost motionless, and not in the least frightened, less than five feet from me.

82. FLORIDA CARDINAL. (*Cardinalis cardinalis floridanus*.)

Fairly common about the larger hammocks. Mr. Driggs permitted one to nest under his porch for years.

83. PURPLE MARTIN. (*Progne subis*.)

A few pairs seen about dead trees in the pine woods.

84. WHITE-BREASTED SWALLOW. (*Tachycineta bicolor*.)

A number of dead birds were shown me in a boathouse in Kissimmee. Small flocks were seen occasionally, but resident winter birds had evidently all been killed off by the unexpected severity of the winter.

85. LOGGER-HEAD SHRIKE. (*Lanius ludovicianus*.)

A common bird. I saw one go on its nest on a branch of a pine, and fully forty feet from the ground.

86. YELLOW-THROATED VIREO. (*Vireo flavifrons*.)

Saw but two.

87. SOLITARY VIREO. (*Vireo solitarius*.)

A few.

88. WHITE EYED VIREO. (*Vireo noveboracensis*.)

A few heard.

89. BLACK AND-WHITE WARBLER. (*Mniotilta varia*.)

Only saw three.

90. BLUE-YELLOWBACK. (*Compsothlypis americana*.)

Quite numerous about the edges of cypress swamps; especially at Lake Arbuckle.

91. MYRTLE WARBLER. (*Dendroica coronata*.)

Extremely abundant about Orange Hammock, less so elsewhere. Usually feeding about the burnt palmettos. A few individuals moulting.

92. YELLOW-THROATED WARBLER. (*Dendroica dominica*.)

I saw two on March 19, hunting about *Tilandisia* in a liveoak at Orange Hammock.

93. PINE WARBLER. (*Dendroica vigorsii*.)

Fairly well distributed throughout the pines. Frequently seen hopping about on the ground in low wet grassy places in the pine woods.

94. PALM WARBLER. (*Dendroica palmarum*.)

By far the most abundant bird of the genus; especially so about Orange Hammock where it could always be found in numbers about dead weed stalks standing in the swamps bordering the river. Tame; the spring moult just beginning.

95. GOLDEN CROWNED THRUSH. (*Seiurus aurocapillus*.)

I saw one by the side of the river on March 19.

96. WATER-THRUSH. (*Seiurus noveboracensis*.)

Not over three or four seen.

97. SOUTHERN YELLOWTHROAT. (*Geothlypis trichas roscoe*.)

Of regular distribution in suitable places. Shy and hard to see owing to its habit of keep-

ing out of sight in palmetto clumps. The northern bird was not seen.

98. TITLARK. (*Anthus pennsylvanicus*.)

Several small flocks noted along the river bank.

99. MOCKINGBIRD. (*Mimus polyglottus*.)

Often seen, but not abundant. A male at Orange Hammock was the finest singer and the best imitator of other birds' songs that I have ever heard. I was so often fooled by it that I ceased to believe my ears when I heard a Chat or Bluebird singing. I several times found myself looking for these and other species that I never saw alive about Orange Hammock only to wind up by listening to a rapid and almost continuous volley of the songs and call notes of the Chat, Bluebird, Purple Martin, Summer Tanager, Cardinal and others. During his long residence there Mr. Driggs rarely shot a bird and his views were shared and carefully respected by us so that many species were common and tame.

100. BROWN THRASHER. (*Harporhynchus rufus*.)

Not often found; usually seen skulking about the edges of palmetto "islands" where I caught one in a steel trap that I had baited with finely cut up bird meat.

101. FLORIDA WREN. (*Thryothorus ludovicianus miamensis*.)

Of general distribution about the swamps and Hammocks, where it was in full song. I failed to detect any difference in its notes from the more northern form.

A pair always bred about Mr. Driggs, buildings in a box.

102. SHORT BILLED MARSH WREN. (*Cistothorus stellaris*.)

Found only in the sawgrass near Lake Arbuckle where it was fairly common.

103. LONG-BILLED MARSH WREN. (*Cistothorus palustris*.)

I saw a Marsh Wren, perhaps this species, while passing through the canal about Cypress Lake on February 26.

104. HOUSE WREN. (*Troglodytes ædon*.)

Often heard than seen in the scrub palmetto of the pine woods.

105. FLORIDA NUTHATCH. (*Sitta carolinensis alkinsii*.)

I secured two males of four birds seen and heard while at Lake Arbuckle. None found elsewhere. These specimens agree well with Mr. Scott's description. The relative extent of black on the wing is greater than in any birds that I have collected about Washington, D. C., and the light edges are also much narrower. There is also a difference in the color of the base of the lower mandible not mentioned by Mr. Scott. In my specimens of *alkinsii* it is dark slaty, while in all my Washington *carolinensis* it is pale brownly. The feet and tarsi also are nearly black and form quite a contrast when placed by the side of Washington birds. I have seen specimens from localities between Florida and Virginia which had the feet and bill intermediate in color. The measurements of these two Florida birds, and also four Wash-

ington specimens of about equal degrees of wearing are added below:

SITTA CAROLINENSIS ATKINSII.

	Wing.	Tail.	Tarsus.	Culmen.
3895 ♂ Lake Arbuckle, Fla.	3.48	1.80	74	71
3882 ♂ Lake Arbuckle, Fla.	3.30	1.64	80	72

SITTA CAROLINENSIS CAROLINENSIS.

	Wing.	Tail.	Tarsus.	Culmen.
1259 ♂ Alexandria Co., Va.	3.62	1.88	78	70
1308 ♂ Washington, D. C.	3.42	1.80	72	71
2011 ♂ Washington, D. C.	3.55	1.92	75	70
3123 ♂ Fairfax Co., Va.	3.37	1.86	72	73

106. BROWN HEADED NUTHATCH. (*Sitta pusilla*.)

Hardly common, but often seen.

107. TUFTED TITMOUSE. (*Parus bicolor*.)

A very few were found at Lake Arbuckle.

108. RUBY CROWNED KINGLET. (*Regulus calendula*.)

At intervals, one of these birds would be found singing in an orange tree; also seen at Lake Arbuckle.

109. BLUE-GRAY GNATCATCHER. (*Poliophtila cærulea*.)

Quite common at Lake Arbuckle about the edges of the cypress; few seen elsewhere.

110. WOOD THRUSH. (*Turdus mustelinus*.)

An occasional bird seen in the live oaks along the river.

111. HERMIT THRUSH. (*Turdus aonalaschkae pallasii*.)

Seen occasionally; not common.

112. AMERICAN ROBIN. (*Merula migratoria*.)

Abundant; either well out on the prairies or in the pines. Very tame.

113. BLUEBIRD. (*Sialia sialis*.)

Quite common about openings in the pines; also where the pines point out into the prairies; usually in pairs, resident.

CLEANING THE FEATHERS OF BIRDS WITHOUT ABSORBENT.

BY GEO. B. TURNER, Chief Taxidermist, U. S. Nat. Museum.

Until recently I have always been under the impression that a bird skin, which is being prepared for mounting, would not stand the same treatment as that given to a mammal skin.

Mammal skins for taxidermic purposes are beamed down or scraped to remove the fat and meat from the insides of the pelt. Afterwards they are treated to a bath of acid pickle* composed of salt water and sulphuric acid. When thoroughly cured they are rinsed in fresh water, washed in soapine and thoroughly dried in fine sawdust. I find after a little experimenting, that a bird skin may go through the same process; but it is not advisable to use sawdust in drying feathers. Nor should plaster of paris be used, for it is an exceedingly difficult and long task to remove all the plaster from the feathers, and if the least bit remains the mounted specimen will show evidence of this neglect on the pedestal on which the particles of plaster will sift from the feathers and the least handling of such a specimen produces a cloud of dust which is very disagreeable, making a handicap in studying the specimen for scientific purposes.

No absorbent of any kind should be used in drying feathers for it is next to impossible to get it all out again.

Plaster of paris tends to make the feathers harsh and destroys the natural gloss. In doing away with the use of absorbents in drying feathers of bird skins which need washing, it is necessary that the skin must first be cured; or otherwise it will not stand the thorough washing and treatment. Therefore it must be placed in acid pickle for curing and allowed to remain from one to several days according to the size of the specimen. All fat and meat must be removed from the skin; this may be done before or after it is placed in pickle. When cured it will stand any amount of washing and handling without fear of feathers or epidermis slipping. The scales on the legs of a Flamingo which I mounted recently had begun to slip; whereupon I placed them together with the whole pelt in acid pickle; when cured the fixing of the scales was complete and gave no further trouble.

The cured skin should next be rinsed in fresh water and treated to a thorough washing with soapine to remove all dirt and grease from the feathers and hide; afterwards it should be thoroughly rinsed in several waters to remove the soapine.

Gently squeeze the water out of the feathers beginning at the head, working down towards the tail, care being taken not to rub the feathers the wrong way; it is best done by squeezing, not rubbing.

Give the specimen a good shaking and hang up on a line to dry. While drying it should be taken up from time to time and given a shaking to prevent the feathers from matting. If an electric fan is at hand, hang the specimen in front of it; the wind will dry and fluff the feathers.

If the work is carefully done from start to finish, it will be found, when dry, that every feather is as clean and glossy as it ever was in life; even the down at the roots will be found to be clean and fluffy and the skin absolutely devoid of grease. The drying and stiffening of the skin during this drying process which is apt to ensue, is a small matter for if it has been properly cleaned of all meat and fat and the pickle has thoroughly cured its pelt, the skin may easily be relaxed for mounting by applying a little water to its inner service or by placing it in a damp cloth over night.

Dry skins may be treated in the same way, but before being placed in pickle should be relaxed a little by soaking in fresh water for a few minutes; the scraping of the skin being done after it has cured.

Curing and drying by the method described above is quicker and easier than the old method of cleaning the feathers in plaster of paris and allowing the hide to dry raw.

Drying of bird feathers in plaster of paris or any absorbent should now be given a back seat for it is quite unnecessary. It is a very disagreeable operation and I think taxidermists will welcome a method that will do away with the necessity of it.

Taxidermists have never been in the habit of subjecting a bird skin to a curative other than arsenic in powder or soap. It penetrates wherever it touches, but there are often places which it does not reach and that spot, is subject to decay and attack of moths. How much better it is to cure the entire skin, to preserve it from decay and moths alike. For this acid pickle preservative not only cures the skin, but makes it moth proof without the aid of arsenic.

This at least has been so in the cases on which I have experimented. My first experiment was on a Herring Gull. After the skin had been cured and cleaned, by the process described, it was allowed to lay in an exposed position inviting moths and dermestes to help themselves for months; but they respectfully declined to have anything to do with the pelt or feathers. Therefore I feel confident in saying that this method of curing and cleaning a bird skin makes it absolutely moth proof.

*The formula for acid pickle (tan liquor) is given in "The Art of Taxidermy" by John Rowley.

WILLIAM SWAINSON AND HIS TIMES.—XII.

BY THEODORE GILL, Washington, D. C.

(Continued from Vol. I, page 155.)

"New Guinea and the neighbouring islands mark its limits in that direction; Australia Proper is its chief seat, and it spreads over the whole of the numerous islands of the Pacific Ocean; whether this province blends with that of America or of Europe, remains for future discovery; but its connection with Africa and Asia has already been intimated".

The student of the present day scarcely needs to be reminded of the imperfections of this system. 1. The Ural mountains are by no means "a natural and well-defined barrier between the two continents;" that range is less of a barrier between Europe and Asia than are the Rocky mountains between Eastern and Pacific America. The "European range", as to its fauna, extends across the entire Asiatic continent down to India. The differentiation of the so-called "continents" of Europe and Asia is an heirloom of the past that is an expression of the conservative spirit of geographers and is in opposition to the experience of travellers and geodesists as well as the present knowledge of naturalists. Swainson's acceptance of the Ural mountains as a natural barrier is evidence of the extent to which a name or idea may mislead an honest investigator. 2. The "Asiatic range" as understood by Swainson gives place, nowadays, to an Indian range or realm. 3. The "American range" is an unnatural combination of at least two very distinct "ranges" or realms. 4. The African and Australian ranges are accepted, with nearly the same limits attributed to them by Swainson, by many zoogeographers of the present day.

Like most of the old speculators on zoogeography, Swainson regarded the animals of the sea as constituents of the same "ranges" or "provinces" as those of the land. This is a fallacy which most zoologists who have studied chiefly land animals have fallen into and some still persist in it and therefore, in this respect, he was simply no wiser than his contemporaries.

The perusal of some of his ideas promulgated in this work published in 1835 lets in a vivid light on the state of information at that time. He represents that

"It was the opinion of Linnæus that all races of animals, no less than of plants, originated in one common central spot; from which they were gradually dispersed over those portions of the earth which they now inhabit. This opinion appears to receive full confirmation from the sacred writings; and, in reference to the general interpretation of the deluge, it would appear presumptuous to controvert this belief, were not the inference here deduced from the Mosaic narrative contradicted by innumerable and undeniable facts. If all the tribes of terrestrial animals, now in existence, descended from a stock preserved in the ark, and subsequently liberated, in what way can we account for the remote and partial locations of innumerable families, cut off by deserts and oceans from

those regions in which all the events of Scripture history took place? Contradictory, therefore, as these facts, at first sight, may appear to be to the Mosaic account of the deluge, the results furnished by zoological science will, nevertheless, on a closer view, rather tend to explain and illustrate the sacred records".

He then considers the alternative attempts of Prichard, the ethnologist, to explain away this discrepancy and adopts one (p. 5).

"The deluge recorded in Genesis," continues our author, "was perhaps, not universal, in the strict sense of the word, as it is now understood . . . It might only extend to the utmost limits of the human race; and other regions, with their peculiar organised creations, might be supposed to have escaped; and this hypothesis might, perhaps, be maintained without doing any violence to the sacred text, of which every expression has received a divine sanction". But this supposition, as our author very candidly admits, "is directly opposed to geological phenomena; which, with a variety of considerations, render it more probable that this deluge was strictly universal. It is incontestable that the fossil remains of animals, every where discoverable, chiefly belong to races different from those which now exist; these were probably exterminated in the great catastrophe. Mankind escaped by the means recorded in the sacred, and in many profane, histories; and with them were saved the stock of animals peculiar to the region in which, before the flood, they had their dwelling, and of which they, and most of the early domesticated animals, are in all probability the native inhabitants. After the deluge, when new regions emerged from the ocean, it is probable they were supplied with organised inhabitants suited to the soil and climate of each district. Among these new races, man, and the tribes which had survived with him, and which were his companions, spread themselves in a later time. The scripture history may thus be reconciled with the facts established by zoological research." Some persons will object to this hypothesis that it assumes positions not laid down in the sacred narrative, such as a partial creation subsequent to the deluge. This must be granted, and the proof of such position must be sought, not in the scriptural history, but in external phenomena. The silence of the Scriptures, in respect to such facts, seems to be of little consequence. It is not to be presumed that these sacred books contain a narrative of all that it has pleased Divine providence to effect in the physical creation, but only of His dispensations to mankind, and of the facts with which man is concerned; and it was of no importance for man to be informed at what era Australia began to contain kangaroos, or the woods of Paraguay ant-eaters and armadillos".

These extracts from Swainson's work display a striking want of general culture, or ignorance, even for his time. In the same month as

the work now under notice (May, 1835) also appeared the fourth edition of Lyell's Principles of Geology. Some idea had already been obtained of the many successive faunas of the past and, years before, Desnoyers, Deshayes and Lyell had recognized that there were even three or four distinct divisions of the Tertiary beds, characterized by distinct associations of animals for the most part not co-existent, and names which they still bear (Eocene, Miocene and Lower and Upper Pliocene) had already been given.

In short, judging by these paragraphs, Swainson appears to have believed (1) that for the world of history at least, there was only one creation; (2) that the deluge destroyed all such life save that which was preserved in the ark; and (3) that there might have been subsequent creation for other lands than the scriptural ones. Even such admission as the last might have been regarded as heretical in those days of strict interpretation. The idea that the denial of the universality of the deluge was "directly opposed to geological phenomena" was a ludicrous one, even in 1835.

The very anthropocentric proposition that animals not useful to man in some way or other were destroyed by the deluge was a supplementary proposition.

These views, however, he shortly afterwards, in the next volume of the series, modified.

Another volume, issued in 1835, was "On the Natural History and Classification of Quadrupeds." This was an unusually poor work. (We use the word *was* because we speak of it in relation to the time in which it was issued.) For example, the order of Marsupials was disintegrated and representatives associated with forms with which they have scarcely dental characteristics in common, much less anatomical. *Thylacinus* was referred to Felidæ (including the Canidæ); in the family of Didelphidæ (Opossums) were thrust the Carnivore genera *Arctictis* and *Cercoptes* and the Insectivore genera *Cladobates* and *Gymnura*; the Wombat (*Phascalomys*) and Koala (*Phascolarctos*) were referred to the Rodents or Glires proper. These are fair samples of the work.

A propos of the disintegration of the order of Marsupials, Swainson concludes (pp. 166, 167) that "it may be expedient to advert to those considerations which have induced us to separate the carnivorous marsupials from those which are herbivorous, and thereby to break up the order *Marsupialia* of the *Regne Animal*. Nearly all our leading naturalists have acknowledged the artificial nature of this assemblage, uniting, as it does, animals of the most opposite natures, and of the most dissimilar organization, merely from the circumstance of their possessing a marsupial pouch. Upon what reasons M. Cuvier, by instituting this order, was induced to violate the very first principles of his own arrangement—which every one sees is mainly founded upon the structure of the teeth—we know not: but this single circumstance is sufficient to excite the strongest suspicion that

his arrangement is not natural. This, at least, was the conclusion at which we arrived, after the most matured investigation we could give the subject, and after endeavoring in vain to discover a circular series among the marsupial animals. It was, therefore, with no small gratification that we found our own impressions confirmed by the opinions of a naturalist eminently versed in this branch of zoology", E. T. Bennett.

Swainson, like these whose sentiments he shared, again showed his inability to look beneath the skin. It scarcely need be added, now, that there are innumerable points of agreement between the different groups of Marsupials distinguishing them from all other mammals.

He, however, greatly exaggerated the weight of English sentiment. There were only two English zoologists of prominence who had given expression to similar opinions, the one cited (Bennett) and Mr. Ogilby. At the same time, two much more scientific men (Richard Owen and G. R. Waterhouse) were engaged in studies which led to opposite conclusions.

Owen, in a memoir published in 1837, especially declared "The agreement of the Marsupial animals in so important a modification of the cerebral organ as the absence [or atrophy] of a corpus callosum and septum lucidum, affords additional and strong grounds for regarding them as a distinct and peculiar group of Mammalia; and when to this modification of cerebral structure are added the traces of the oviparous type of structure, presented in the circulating and absorbent systems, together with the peculiarities of the osseous and generative apparatus, we may with reason suspect that distribution of the *Marsupialia* to be artificial, and founded on an imperfect knowledge of their mutual affinities, which, from a modification of the teeth and extremities alone, would separate and disperse the species amongst corresponding groups of the Placental *Mammalia*."*

Waterhouse, in a volume of the same series ("The Naturalist's Library") on which Swainson had co-operated, took occasion to controvert his statement in a volume on the "Marsupialia or Pouched Animals." He truly asserted, "it is evident that Mr. Swainson is in error, in stating that 'nearly all our leading naturalists have acknowledged the artificial nature of the assemblage;' but I think we might, on the other hand, say, with safety, that all the most eminent anatomists (these being at the same time zoologists) agree in uniting them at least all who have written on the subject, and who have had the necessary materials for forming a just opinion. I could wish, however, that this important question should not rest upon *authority*; but to go through the train of reasoning, by which the anatomists have arrived at their conclusions, would require more space than can be spared in a volume like the present one, and, moreover, would not be suited to a popular work" (p. 63, 64).

The "Marsupial Pouch" which Swainson supposed to be the sole characteristic of the Mar-

*Professor Owen 'On the Structure of the Brain in Marsupial Animals,' Philosophical Transactions, Part I. for 1837.

supials, it may be added, is not even an essential one, several Opossums, for example, being destitute of the appendage.

Man was excluded not only from the class of Mammals, but from the Animal Kingdom! He avers (p. 7) that "there is not merely an innate repugnance, but a disgust and abhorrence in every human being, ignorant or enlightened, savage or civilized, against the admission of this relationship"! He asks (p. 74), "Does man, then, stand as the sole representative of a Mammiferous order". He answers (p. 75), "Man is entirely excluded from the *Primates* L., and consequently from the entire circle of the animal kingdom".

This specimen of his "philosophy" and theology will suffice.

The five orders adopted in the volume were Quadrumana, Feræ, Cetacea, Ungulata and Glires. Three of these were marred by the intrusion of Marsupials and Monotremes, the latter being thrust into the "tribe" of the "Edentates", which was, with gross impropriety, considered as a subdivision of Ungulata.

Swainson thought that *Megalonyx* "affords a beautiful link of connection between the *Pachydermes* and *Edentates*". As a corollary follows the proposition (p. 199): "The discovery of this animal, in short, sets at rest the scruples of those who have imagined that extinct animals formed no part of the circular plan pursued in the creation of existing races".

In the new volume he admits more than one creation. Apropos of the extinct mammals of the Eocene basin of Paris, he indulges in some remarkable reasoning.

He erroneously took it for granted that the extinct forms were related to each other and formed a natural group and assumed that they "were semi-aquatic quadrupeds" and that "the ploughed fields, the sultry plain, or the beaten road, would have been certain death to these water-loving quadrupeds"; consequently, that "they would have been utterly unserviceable to the wants of man". The intense belief in the subordination of Nature to Man then finds expression. The ancient animals were exterminated mainly to make room for the Ruminants and Man, but not entirely so!

In estimating this work, it need only be recalled that de Blainville, as far back as 1822, had divided the class into two subclasses and, in 1834, into three, the Monodelphes, Didelphes and Ornithodelphes, and that classification still stands. The order of Marsupials had been adopted by all competent mammalogists for some time. Swainson's ignorance of anatomy and his contempt for its importance prevented him from utilizing the data that had been acquired.

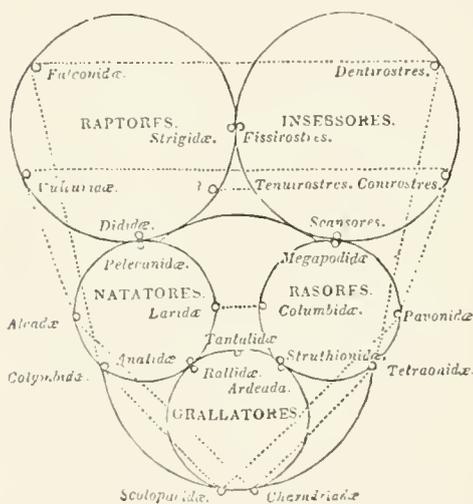
In 1835 Swainson lost his excellent wife. He felt severely this bereavement: "No husband could have been happier during twelve years," he exclaims.

Swainson's next work was "On the Natural History and Classification of Birds", which was in two volumes and published in 1836 and 1837 respectively. A long history of ornithology

was given and the groups considered from his peculiar point of view.

The birds constitute the second or "subtypical" class of vertebrates and are themselves divided into five orders—a typical (Raptors), a subtypical (Insectores), and three aberrant collectively, however, representing another circle. As an example of Swainson's graphic mode of representation, his scheme of the major groups of birds is exactly reproduced here from the end of "Part iii" and (vol. 2, p. 200) opposite the commencement of "Part iv, Synopsis of a Natural Arrangement of Birds." The prime divisions of all the orders except Insectores are designated as families; those of the Insectores as tribes and each of the tribes is broken up into five families.

AVES.



His Insectores included almost all the true Passerine birds and some of the Picarian. The oscine or acromyodan and clamatorial or mesomyodan forms were not at all distinguished, but completely intermixed and dispersed among the unnatural tribes and families.

The five tribes are subdivided into families as follows:

The *Dentirostres* have Laniidae, Merulidae [= Turdidae], Sylviidae, Ampelidae and Muscipidae.

The *Conirostres* are Corvidae, Sturnidae, Fringillidae, Musophagidae and Buceridae.

The *Scansores* embrace Ramphastidae, Psittacidae, Picidae, Certhidae and Cuculidae.

The *Tenuirostres* are Meliphagidae, Cinyridae, Trochilidae, Promeropidae and Paradisidae.

The *Fissirostres* are extended to Meropidae, Halcyonidae, Trogonidae, Caprimulgidae and Hirundinidae.

Most of these families are far from having the same limits as those bearing the same names nowadays. No demarcation was made between the clamatorial and oscine birds; indeed, to get

Sylvanus Hanley, with new text, as a second edition of "Exotic Conchology; or Figures and Descriptions of beautiful, or undescribed shells".

After having made most of his arrangements for emigration, he learned of the retirement of John George Children from the keepership of the Zoological Department of the British Museum and, in March, 1840, sent an application for the vacant position to the Archbishop of Canterbury (Rev. Dr. William Howley) in whose power the appointment rested. The Archbishop does not seem to have gone beyond the acknowledgment of receipt of Swainson's letter.* At the same time, he applied to Children, asking him to use his influence to promote the candidature, but Children declined to do so, and expressed the opinion that J. E. Gray, then a subordinate in the department, was the one best qualified for the post.

Swainson was not content to look out for his material welfare. He was solicitous for his spiritual future and not only for his own, but for his fellow creatures. He contemplated some missionary work in New Zealand, and sought information from several persons. J. Bunting (21 April, 1850) gave him information about such matters and also (11 November, 1840) furnished him with a letter of introduction to missionaries in New Zealand; Mr. D. Coates also wrote (27 March, 1840) to him giving further information. Mr. E. S. Cotton of London also sent him letters (18 August, 1838 and 14 January, 1840) about religious matters.

Swainson did not intend to abandon zoological studies, and was careful to give notice that he intended still to prosecute his investigations and to continue collecting. Adam White was not the only one he conferred with about future work; he also communicated with Hugh Cumming, the great shell collector (24 November, 1840), as well as with Edward Doubleday (8 July and 20 July, 1840), C. S. Rafinesque (April, 1840), and others.

His parting words in the autobiographical sketch published late in 1840 were—

"The greater part of my collections, I trust, will be transported to New Zealand, where they may possibly stimulate others to the study of nature, and form the basis of a Zoological Institution. My career, as a professional author, will soon close". And he adds, in a foot note, instructions as to his future address:—

"That my foreign correspondents may not construe this into a total abandonment of zoological pursuits, I still hope to communicate with them as heretofore; I shall be most happy to exchange duplicate insects, etc., particularly from India, America, the Cape, and different parts of Australia. For this purpose, parcels sent to me to England, should be directed to the care of Messrs. Longman, Orme, and Co., Paternoster Row; or, to W. Shuckard, Esq., Librarian to the Royal Society, Somerset House, London. But as Sydney is the most direct channel of communication between New Zealand, India, and the Brazils, anything sent from those quarters may be addressed to the care of Mr. Reid, chemist, Sydney; or to the care of the Officer in charge

of the Commissariat of Accounts, Sydney, New South Wales".

It is not altogether easy to reconcile the "trust" as to "the greater part of [his] collections" with the fact that he had disposed of them before leaving. Possibly he might not have completed his negotiations and might have despaired of doing so when he wrote.

The industry of Swainson, it will have been seen, was manifested in the production of at least one and often two volumes a year. Consequently he must have made good use of his time and allowed little to go to waste. Nevertheless, editors and publishers often prodded him to greater expedition. Lardner frequently wrote, urging him to more speed, but appears to have given up in January, 1838. The publishers, Longman & Co., in April (24), 1840, wrote, "pressing him for completion of the 'Cabinet of Nat. Hist.' before his departure" from England. Incidentally, too, there was much correspondence about terms and money matters and Swainson presented bills and demands which were resisted by the publishers. It seems that Swainson received £200 for the Preliminary volume.

There was considerable correspondence, also, between the Edinburgh publisher, W. H. Lizars, and Swainson relative to the volumes for the Naturalist's Library. In one letter (25 January, 1837), Lizars "remonstrated against S's overcharges for his contributions to the 'Naturalists' Library'" and adds that the editor, Sir William Jardine, also "thinks them exorbitant."

Finally, however, Swainson completed the volumes for which he had contracted and settled with the publishers, apparently to their satisfaction.

Late in 1840, Swainson with his children left England in a vessel bound for New Zealand. That vessel was disabled and obliged to deviate from its course and visit Rio de Janeiro to refit. It has been reported that many of his effects, and among them his collection of drawings, were lost to himself at least. Nevertheless, much may have been rescued, for his correspondence for many years was saved.

His biographer for the Linnean Society informs us that, "on his arrival in New Zealand, he soon found that he had been misled by exaggerated representations. He did not, however, suffer himself to be dejected by these losses and disappointments". From Rio de Janeiro, "he had brought with him numerous vegetable productions, which he thought would be suitable to the climate of New Zealand, and he set himself energetically to work to establish himself in his new abode".

He eventually settled at a place called "Fern Grove" on the River Hutt.

The present writer has been unable to obtain any definite information respecting his life in the colonies. Part of it was spent later, in 1851, in New South Wales and, in 1853, in Tasmania. In Tasmania, he appeared to have been

(Concluded on page 176.)

*See Taxidermy, etc., p. 346.

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NOVEMBER AND DECEMBER 1901.

Comments.

THE NINETEENTH CONGRESS OF THE AMERICAN ORNITHOLOGISTS' UNION.

Another year has come and gone, and again the Ornithologists of the American Union have assembled in annual congress. Their meetings were held in the halls of New York City's great museum,—a museum, by the way, that stands already among those of all most famous, where so many times before they have enjoyed the hospitality of the museum authorities, and the genial cordiality of the custodians of its ornithological treasures, who, together with the other members of the New York contingent, have always contributed so much to the pleasurable attractiveness of these gatherings at the metropolis.

On the evening of the eleventh of November the active members convened for the transaction of annual business. All the officers of the past year were reelected, and a change in the character of membership, previously proposed, was discussed and effected. This provides for

the creation of a new class, between the active members and the associates, to be composed of those now among the associate list who are most active in ornithological work. Those formerly known as active members, will now be called Fellows; those of the new rank, Members; the Associates as before. Five of the six vacancies in the limited list of fifty Fellows were filled by the following elections: Dr. T. S. Palmer and Prof. F. E. L. Beal, both of Washington, D. C.; Mr. Outram Bangs, of Boston, Mass.; Mr. Joseph Grinnell, of Palo Alto, Cal.; and Dr. Louis B. Bishop, of New Haven, Conn. The number of Members, in the new classification, is to be limited to seventy-five, all but twenty of which were selected at this meeting.

For three days, beginning on Tuesday the twelfth of November, there were regular morning sessions of the Union at 11 o'clock, and in the afternoons at 2, the time, as is customary, being devoted almost entirely to the presentation and discussion of scientific papers.

On the first of these days Prof. H. C. Bumpus, on behalf of the President of the Museum, in a brief but very happy address, welcomed the members assembled and extended the freedom of the institution; to which a fitting reply was made by the President of the Union, Dr. C. Hart Merriam. Following this, Dr. J. A. Allen presented a paper on "The Present Outlook for Stability in Nomenclature;" Dr. J. Dwight, Jr., one on "The Plumages of the American Goldfinch"; and Mr. F. M. Chapman spoke "On Methods in Museum Bird Exhibits". Succeeding the midday adjournment, as on all three days, the members of the Linnaean Society of New York entertained the Union at luncheon. In the afternoon the subjoined papers occupied the time: "The White-winged Crossbill in Captivity" by Mr. James H. Hill; "Some Impressions of 'Texas Birds'" by Messrs. Louis Agassiz Fuertes and Harry C. Oberholser; "Ornithological Notes from Northern New Hampshire" by Judge John N. Clark; and "Routes of Bird Migration Across the Gulf of Mexico" by Prof. W. W. Cooke; the last, in the absence of the author, read by Dr. T. S. Palmer.

On Wednesday morning, November 13, the following formed the program: "The American and European Herring Gulls" by Dr. J. A. Allen; "Auduboniana" by Mr. Ruthven Deane; "The Moults and Plumages of the North American Ducks" by Dr. J. Dwight, Jr.; "Seven New Birds from the United States" by Dr. Edgar A. Mearns. In the afternoon there were three papers, all illustrated by lantern slides: "A

Naturalist in Yucatan" by Mr. E. W. Nelson; "Photography in North Dakota Bird Colonies" by Rev. Herbert K. Job and "A Reconnoissance in Manitoba and the Northwest" by Mr. F. M. Chapman.

The forenoon session of Thursday was devoted to Mr. Hubert L. Clark's paper, "Are Humming-birds Cypseloid or Caprimulgoid?"; to Mr. Otto Widmann's "List of the Birds of Wequeton-sing, Mich." and Mr. Spencer Trotter's "Notes on the Ornithological Observations of Peter Kalm." The afternoon was occupied by papers relating to bird protection, consisting of the "Report of the Committee of the Protection of North American Birds" by Mr. Witmer Stone; "Results Obtained under the Thayer Fund" by Mr. William Dutcher; "National Bird Protection—Its Opportunities and Limitations" by Dr. T. S. Palmer; "Gulls of the Maine Coast, and Miscellaneous Notes" by Messrs. William Dutcher and William L. Bailey; and "Some Results of Bird Protection" by Mr. F. M. Chapman,—the two last illustrated by stereoptican views. This completed the program; the next congress of the Union will be held in Washington.

Through the courtesy of Mr. W. T. Hornaday, the ornithologists and their friends were invited to inspect New York's new Zoological Park on Friday the following day, and for those who availed themselves of this privilege, exceedingly enjoyable entertainment was provided.

Nor should we fail to mention the convention of Audubon Society workers which took place in connection with the meeting of the American Ornithologists' Union. Delegates from the various societies met on the morning of November 14, to hear the report of the committee last year appointed to consider the advisability of perfecting some kind of national organization. The recommendation of this committee, to the effect that a national committee be formed, to consist of a single delegate from each society, and to have for its object better cooperation among the various societies, was finally adopted. After some general discussion the meeting was declared adjourned, to assemble, however, it is hoped, next year in the city of Washington.—H. C. O.

Letters.

NOTE ON THE NOMENCLATURE OF BERMUDA BIRDS.

EDITORS OF THE OSPREY:

Mr. A. Hyatt Verrill published a short paper on the Bermuda avifauna in the American Journal of Science for July, 1901, (issued the last of June). He also printed a more detailed article in THE OSPREY, (v. pp. 83-85) for June, 1901, (issued in July) with figures of the three following species and of the Tropic Bird photographed from life. In these articles he described the Bermuda Cardinal Bird and the Bluebird as new sub-species, peculiar to Bermuda. The Cardinal Bird he named *Cardinalis cardinalis Somersii*; the Bluebird, *Sialia sialis Bermudensis*; the Ground Dove, *Columbigallina passerina Bahamensis*.

Outram Bangs and Thos. S. Bradley also published a paper on the Birds of Bermuda in "The Auk" for July, 1901, (pp. 249-257), in which new names are given to some of these birds and others which they call new species.

They named the Ground Dove, *Columbigallina bermudiana*; the White-eyed Vireo, *Vireo bermudianus*; the Catbird, *Galeoscoptes bermudianus*; the Cardinal, *Cardinalis bermudianus*. Mr. Verrill's first article appears to have been published a few days earlier than the latter.

To me it seems quite useless to regard these very slightly differentiated forms as distinct "species." The differences noted, in the Ground

Dove, Catbird and Vireo, are trivial and scarcely sufficient to constitute *varieties*. To consider them as "subspecies" is certainly a sufficient strain on the much-stretched meaning of the term.

In respect to the Ground Dove, there are reasons for believing that it was introduced into Bermuda from the Bahamas, since the settlement of the islands, like many other things. None of the earlier writers mention it in the lists of birds that they gave. This would hardly have been the case had it been present, for it is exceedingly tame and familiar.

Mr. A. K. Fisher, in Bird Lore, October, 1901, (p. 178), states that the original *Motacilla sialis* Linné, ed. x, p. 187, was from Bermuda. This is not correct. Linné gave it as "Bermudis & America calidore." He also quoted Catesby, Hist. Carolina, etc., p. 48, pl. 47, 1731. Catesby says that he had seen it in "Carolina, Virginia, Maryland and the Bermudas." But he states in his preface that his birds were mostly drawn in Carolina and Georgia, where he spent several years in drawing them. A few were drawn in the Bahamas, where he spent about a year, mostly on the fishes and plants. He does not say that he made *any* drawings in Bermuda, where he probably made a mere passing visit. The Bluebird does not occur in the Bahamas. His figure clearly represents the common North American variety.—A. E. VERRILL.

Literature.

STORIES OF BIRD-LIFE by T. Gilbert Pearson. Richmond: B. F. Johnson Publishing Company. 1901. [12mo., 236 pp., col. front. Price 60 cents].

This modest little volume is a collection of interesting stories of bird-life pleasantly told. There are twenty of these in all and two appendices as follows.

The Arredondo Sparrow Hawk, Our Chimney Dwellers, The Childhood of Bib-Neck, (Wilson's Plover), Robin Redbreast, An Old Barred Owl, The Birds of Cobb's Island, Virginia, A pair of Eagles, Bird Key, The Mocking Bird, The Vultures, Wood Duck Life, The Snowbird, A Bobwhite Family, Levy, the Story of an Egret, The Quest for the Cormorant's Nest, Cuckoo, the Rain Prophet, Ruffle-Breast, the Shrike, The City of the Longlegs, A Quartet of Woodland Drummers [= Woodpeckers], Winter Life on a College Campus, Appendix I, Appendix II.

"My purpose in writing these stories and sketches of birds," says the author, "has been that I might make others acquainted with the ways of some of the wild birds which have been of so much interest to me. Should they serve to give the reader a little more intimate acquaintance with our feathered neighbors of the field and woodland, my main object will have been accomplished.

"These stories are not fanciful, but are true to bird-life. The Arredondo Sparrow Hawk, Ruffle-Breast and Socrates were particular birds well known to others as to me. In the case of the Bobwhite family, and Bib-neck, the Plover, I have combined into the lives of a few birds incidents I have known to occur to many. The accounts of visits to birds' nests, bird colonies and the like are given as they occurred. In the Appendix some suggestions are offered to the student and the teacher".

We shall quote a few paragraphs of some chapters in order to give our readers a glimpse of the author's pleasing style. In "An Old Barred Owl", after explaining the capture of a Crow by the Owl the previous night, the author states:

"Next morning when I awoke I heard a great outcry among the Crows. They were flying excitedly about their roosting pines cawing and cawing with every possible degree of anger in their voices. They seemed to be discussing something of importance, and when a conclusion was reached they at once started to carry out their plans. Over the peanut field they streamed, and continued on across the old corn-field where the Bobwhite family was taking its breakfast. Straight to the bottom land woods they flew, and scattering about overhead began searching the trees and bushes, craning their necks downward and peering into every place where an Owl could hide. The clamor never ceased for a moment as the search went on. What the signal was I could not tell, but at some word all turned their attention to a tall cedar, in which a sharp eye had found the object of their quest. It was the old Owl, sitting on a limb close to the trunk and blinking his big eyes as if in wonder at all the unusual

noises about. Oh, how they screamed at him! "Murderer, murderer", they yelled. "You Owl, you Owl—you eat folks raw, raw, caw, caw,—we saw, we saw, you old outlaw, outlaw". They reviled him, they told him as plainly as in words which could be spelled that they detested the very thought of him".

While looking over "The Snowbird" we find:

"Visit the Junco in his summer home and you will find his lodge a simple little nest of grass and rootlets hid away in a low bush, or in some snug spot on the ground; and if the season be early you may find in it four or five brown-spotted eggs. Here too you may hear his singing; and his short trill of early spring has now a deeper, sweeter tone".

"There is a picture which will long linger in my mind, of a pair of Snowbirds and their nest, upon the side of Grandfather mountain. When we saw it the morning sun was flooding the Blue Ridge in a blaze of golden light. Down the slopes and into the valleys its foremost rays were darting, jewelling in their course a thousand dewdrops on every tree and rock. Grand and beautiful were the surroundings; as fresh did the world seem as if just from the Creator's hand. On the eastern side of this mountain, where it was always sure of the warmth from the rising sun, a little bird sat snugly in her nest on the ground. Now the light shown directly upon her, but later when the blazing orb should climb higher through the heavens, there was the shelter of an overhanging cluster of leaves to protect her from the scorching rays. Her head turned inquiringly from side to side, as with first one eye and then the other she examined a neighboring laurel bush behind which appeared two heads. "Queer they keep looking at me", she may have said to herself, "but I guess they will not hurt a body".

"Just then her mate flew along and alighted on the topmost spray of a neighboring bush. He evidently did not see the strangers, for a moment later in a low reassuring tone he began his morning song. Louder and more confident he became as the beauty of the morning and the sense of security of his mate and their treasures grew upon him. His head was thrown back, his white breast contrasted strongly with his black head and gray coat, and his throat swelled as the enchanting strain came stronger and clearer. Ah! why did we ever have to leave the singer and his song"!

Again, in "A Bobwhite family", whose nest has just yielded "thirteen, little, brown, fuzzy, down covered balls", we find:

"Great was the anxiety of the old ones that day, for they had so many duties to perform. Nourishment must be found for mouths which as yet had never tasted food. The grass must be watched for lurking cat or skunk or gliding snake. One eye must be kept open for dogs or men. The sky must be watched for murderous hawk, while all the time great care must be exercised to keep the family together".

But a sadder strain, a call for sympathy for our feathered friends, appeals from all the sketches; while the author refrains from preach-

ing or moralizing, he can not help presenting the many vicissitudes which surround each little bird, for instance, in the same chapter as the last quoted from, we find:

"Still another was struck by a shot that fatal day in the peanut field, but had been able to make its escape with the others. When cover was reached it had picked the feathers out of the wound in its side and cleared away the blood, doing the best it knew for its hurt. But the heavy sickening pain in its body continued. All day it crouched trembling or ran on after the others when the dread of being left alone came upon it. It tried to ease its pain by eating certain berries or leaves which old Mother Nature whispered in its ear might be good. Through the long hours of that autumn day it knew no joy, only sorrow was in its heart, and a great fever was in its brain, and a swimming dizziness in its eyes. At times it struck with its beak hard and wantonly into the ground where it lay, as if seeking a solace there. A choking thirst almost stilled the piteous notes of complaint which at times escaped.

"As the evening came down the gathering call of the family sounded over in the field.

The bird endeavored to rise, but the exertion only resulted in spasms of pain and it lay hopelessly fanning the ground with its wings. Oh! the agony of that day, and the hours yet to follow! The dews of night, which soon began to gather, revived the bird a little, but this only made it more conscious of its sickness as the hours of darkness wore on. There it lay alone beating out its life in the forest. There was no sound save the sounds of the night, the singing of the crickets in the grass, the croaking of the frogs down in the swamps, and the distant baying of the farmer's dog".

The book is well illustrated having a frontispiece in color of the Sparrow Hawk, and seven other full page plates, together with seventy-two text figures prepared by or under the direction of J. L. Ridgway.

All in all, we believe it to be a most interesting contribution which will find a wide circle of friends.

The frontispiece of this issue, is from a photograph taken by Mr. Wm. H. Fisher of Baltimore, Md. The notes relating to this nest were published in October, 1899, (iv, No. 2).—Ed.

WILLIAM SWAINSON AND HIS TIMES. *Continued from page 172.*

commissioned by the colonial government to report on the forests and did make a report on them. He also kept up his interest in conchology and presented to a local society (Royal Society of Van Diemen's Land) three papers on the classification of shells. He appears, however, to have given up his correspondence with other naturalists. At least no letters later than 1840 were in the collection recently acquired by the Linnaean Society of London.

Eventually, he returned to his former home in New Zealand and there, in 1855, (December 7th), gave up his struggles and his life.

In addition to the volumes already mentioned as published by Swainson, several others have been named by Mr. Boulger in the biographical sketch in the Dictionary of National Biography (vol. 55, p. 193). These are "Observations on the Climate of New Zealand, 1840, 8vo."; "The Faculties of Birds, 1847"; and "The Domestic Habits of Birds, n. d."

The "Observations on the Climate of New Zealand" (1840) has been attributed to the naturalist, in the sketch in the Proceedings of the Linnaean Society as well as in the Dictionary of National Biography and various bibliographies, but the same work has been attributed also, in the same Dictionary and on the next page (p. 194), to another and apparently not nearly related William Swainson, the first attorney general of New Zealand. The latter was undoubtedly the author. The relationship of the two Swainsons (if any) has not been indicated.

The other titles must be the result of some mistake as they do not appear in the Bibliotheca Zoologica of Carus and Engelmann, nor in the Catalogues of the British Museum, Zoological Society, or Linnaean Society of London. They may indicate reprints of parts of, or extracts from, Swainson's real works.

Collections or parts of collections of more or less importance made by Swainson still exist in various museums. The last part, and apparently supposed to be more complete than it actually proved to be, was purchased for the University of Cambridge, and "many of the specimens are still preserved in the University Museum," according to Professor Newton. A small collection, it is said, chiefly of shells, had previously been obtained for Manchester.

Most of his drawings and manuscripts appear to have been retained by Swainson. His subsequent losses by shipwreck, too, must have been less than reported at the time. At any rate, a daughter returned to England with a collection of 934 letters written by 236 correspondents, covering the full period of his scientific activity and extending from 1806 to 1840. These were purchased in 1899 for the Linnaean Society of London for £50 and arranged by the president, Dr. Albert C. L. G. Günther, as has already been noticed in the OSPREY (v, p. 13).

It seems also, from a "Catalogue of the Colonial Museum Library" of New Zealand (1900), that the Library has note books of Swainson, such being entered (p. 56) as "Swainson's Collection, (two books of pencilled notes and figures of fishes,)" without any other data.

The address of Doctor Günther and his accompanying "Catalogue of the Swainson correspondence" has been very useful in the compilation of the present "Life" and have been partially corroborated by the present author. During the forenoon of a day in July, 1901, through the courtesy of the accomplished assistant secretary, Mr. J. G. Harting, he was allowed to freely consult the manuscripts and utilize the information derived from them as he would.

THE END.

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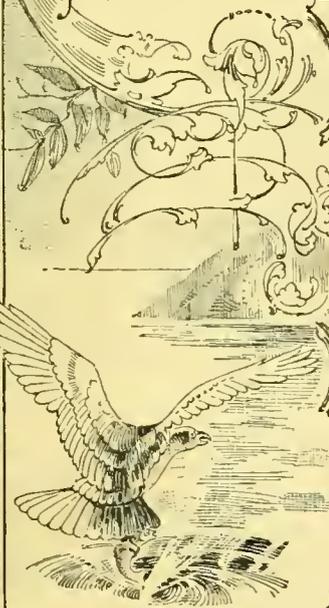
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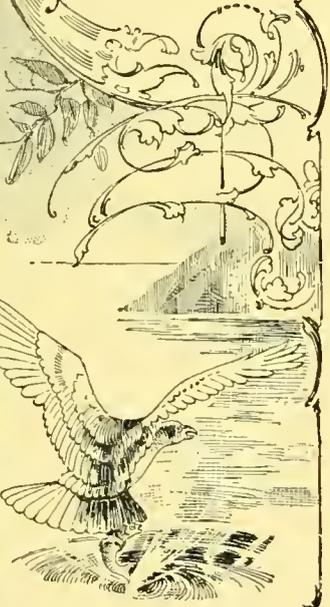
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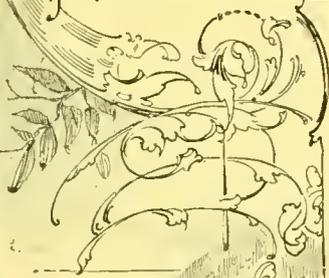
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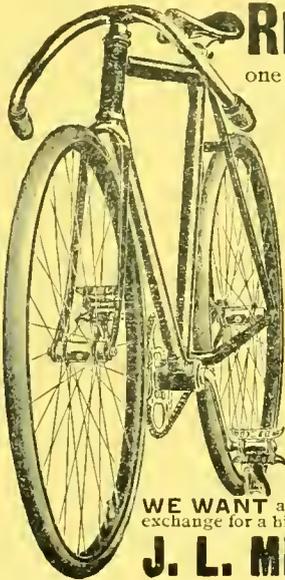
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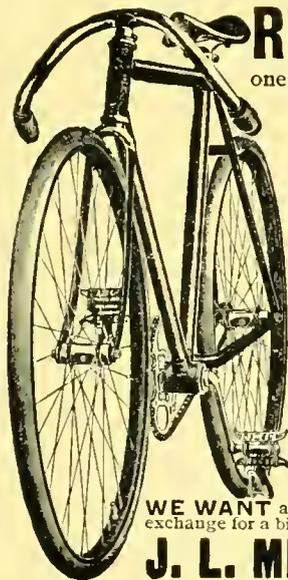
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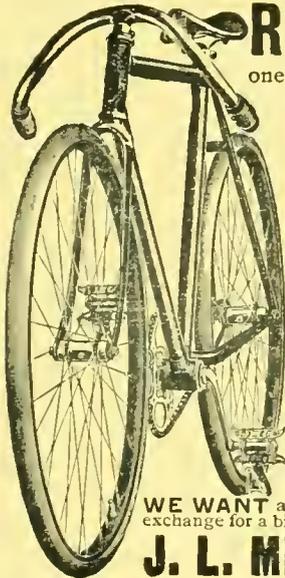
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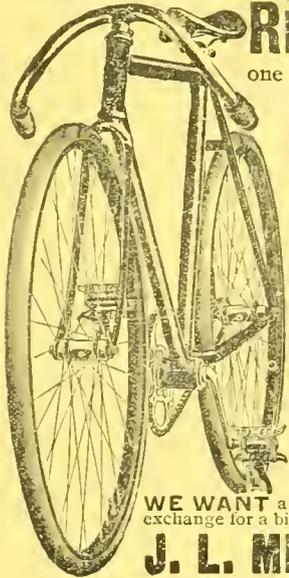
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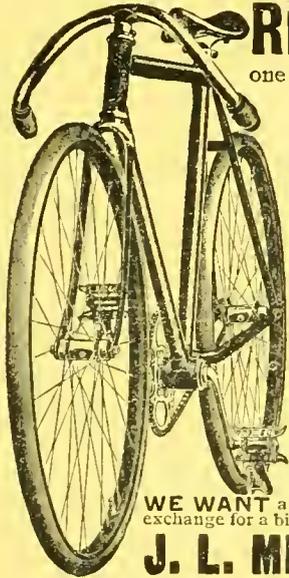
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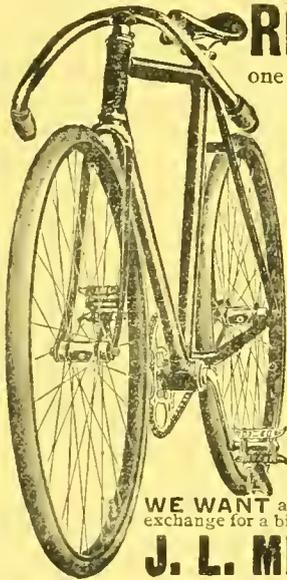
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