

THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO
OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XVII. NO. 1.

ALBION, N. Y., JANUARY, 1900.

WHOLE No. 162

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants," "Exchanges" "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

Strictly First-class specimens will be accepted in payment at one-third list rates.

What's Your Number?

Examine the number following your name on the wrapper of this month's OÖLOGIST. It denotes when your subscription expired or will expire.

No. 162 your subscription expires with this issue
165 " " " " " April, 1900
170 " " " " " Sept. "

WANTED:—A good mounted Albino Squirrel, {pure white. Will pay cash or give good exchange in skins or mounted specimens. Send full description and lowest cash price. O. S. BIGGS, San Jose, Ill.

FOR EXCHANGE:—Fine collection of 180 different kinds of U. S. and foreign stamps, including many rare ones, for best offer in A No. 1 sets of eggs. J. STANLEY HOWARD, West Medford, Mass.

TO EXCHANGE:—First-class sets of eggs with datas for a camera size 4x5 with entire outfit. Would like a double plate holder in camera if possible. Address GEORGE W. THOMPSON, Jamaica Plain, Mass.

WANTED:—"Star" tobacco tags. I will pay 50c per 100 for same with small stars on the back, and 10c per hundred for plain tags without stars. Address F. W. COLLINS, Box 431, Garden City, Kan.

TO EXCHANGE:—Mounted birds and eggs in sets and singles for same. GEO. L. SWÉZEY, Bruen Ave., Irvington, N. J.

I HAVE a few sets of Am. Bittern for sale cheap. If you want to buy eggs from this locality, cheap, next season write. FRED MALTBY, Harvey, N. Dak.

\$3 will buy 150 kinds of foreign and native woods or will exchange for woods not in my collection. LOUIS W. HAHN, Lake Avenue, Silver Creek, Chautauqua Co., N. Y.

WILL EXCHANGE S. B. shotgun, pair No. 10 hunting boots, lancewood rod for animal heads, skins or horns, mounted or unmounted. Box 421. West Haven, Conn.

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WANTED:—Sets 31, 63, 104, 118, 140, 196, 318, 365, 408, 453, 452a, 631, 706, 712, 731 and others. Offer sets, mounted birds and skulls. VERDI BURTCH, Penn Yan, N. Y.

FOLLOWING SETS to exchange for sets A. O. U. Nos. 2, 155, 224, 228, 207, 402a, 482, 479, 712 and 487. Would like sets of 280, 300, 305, etc. CHAS S. THOMPSON, Stanford University, Cal.

WANTED:—Copper pennies dates 1793, 1799, 1804, 1808, 1809, 1811, 1823. In exchange birds eggs, Indian relics, old U. S. money. Good bargains. All letters answered. H. W. MITCHELL, 306 Nelson Ave., Saratoga Springs, N. Y.

EXCHANGE:—Have a number of cloth bound books on fiction to exchange for sets with full data. Canadian collected only. A. M. MACALISTER, care of Mercury office, Guelph, Ont., Can.

TO ORNITHOLOGISTS:—I shall do some collecting on the Pacific coast soon with headquarters at Riverside, Cal., from Jan. 15th to April 15, 1900, and where I shall be pleased to see or collect with anyone interested in the birds of that section. F. T. PEMBER, Granville, N. Y.

WILL EXCHANGE for fine sets *rare eggs*, a 4x5 Poco C Camera, new and regular equipment. THOMAS H. JACKSON, 343 E. Biddle St., West Chester, Pa. 163

EXCHANGE:—I will give \$1.45. catalogue value, worth of sets or singles for every 100 "Star" tags with stars on back and 35c worth per 100 for the plain tags. F. W. COLLINS, Box 431, Garden City, Kan.

FOR SALE:—Finely prepared skins with skulls of small mammals from Northern Alberta, spermophiles 3 sp., tamiias 2 sp., lagomys, thomomys, sciurus, evotomys, peromyscus, sorex, putorius, canis, etc., etc. Also crude skeletons and choice bird skins, rare owls, grouse, ptarmigan, etc G. F. DIPPPIE, 17 McMillan St., Toronto, Canada.

FOR EXCHANGE:—Jasper Mound Relics, Fossils, War Relics, Old Notes, old time Slave Papers. Wish Copper Cents. Polished Agate, large, also American and Spanish War Relics wanted. H. J. SWENTZEL, 835 W. 6th Street, Wilmington Del.

EXCHANGE NOTICE—Curiosities, coins, botanical specimens, fossils, shells, gas generator, firearms, ammunition, microscopical objects (mounted or unmounted) books and magazines (all subjects: botany conchology, geology, novels, entomology, etc.) to exchange for stamps, printing press, turning lathe, microscope and accessories. Address with stamp G. R. LUMSDEN, Norwich, Conn.

WANT MOUNTED BIRDS Nos. 200, 202, 203, 208, 335, 333, 337, 387, 416, 418, 420, 423, 444, 514, 540, 546, 550, 559, 563, 584, 585, 587, 597, 604, 610, 614, 616, 628, 661, 633, 722, 724, 725, 728, 749, 755 and 756, in exchange for Nos. 4, 59, 112, 129, 130 pair, 131 pair, 132 female, 149 pair, 151, 152, 167, 190, 191, 194, 201, 221, 228, 230, 235, 239, 256, 263, 274 and young in down, 363 pair, 367, 368, 373 young in down, 385, 048, 458, 468, 615, 632, 683a, 707, 727a, 763, also a Jackdaw. GEO. H. SWEZEY, Bruen Ave., Irvington, N. J.

WANTED:—Skeletons and Skulls, all kinds, in rough and mounted, Bird and Mammal Skins, Reptiles and Batrachians in alcohol or formalin. Desire correspondents in all parts of United States, Mexico and Canada. Back numbers of papers on Natural History and scientific books wanted. Offer in exchange fifty species finely prepared Invertebrates in formalin, eastern bird skins, etc. Correspondence solicited. F. P. DROWNE, 20 Benefit St., Providence, R. I.

FOR SALE OR EXCHANGE:—Eggs, sets and singles. Wanted, books, camera and cash. Vol. 1 complete *The Osprey* for best offer in cash. W. A. LEE, New Vineyard, Me.

FOR SALE:—A foot power band saw and an improved Simplex typewriter for sale cheap, all in good order. LOUIS W. HAHN, Lake Avenue, Silver Creek Chautauqua Co., N. Y.

FOR SALE:—Clutches of European species, White Gryfalcon, Gryfalcon, Merlin, Green Sandpiper, Greenshank, Golden Eagle, Gray Sea Eagle, Kestrel, Sparrow Hawk, Honey Buzzard, Peregrine Falcon, Hobby Egyptian Vulture. Apply, GORTON, 2 Upper Gloucester St., Pendleton, England. 171

CHOICE SETS of White Pelican, Laughing Gull, Willet, Wilson's Plover, Foster's Tern, Clapper Rail, Black Skimmer, Green Heron and many others for sale very cheap. M. T. CLECKLEY, 457 Greene St., Augusta, Ga. 164

A FEW good sets for back numbers of Ornithological publications. J. D. SORNBORGER, 101 Hammond St., Cambridge, Mass.

WANT to buy for cash or exchange A 1 skins of Sage Grouse, Ptarmigan, rare Warblers. Send lists of what you can collect and cash price for first class skins. Illustrated catalog, 10c. CHAS. K. REED, 75 Thomas St., Worcester, Mass.

A GLOVE and leather sewing machine, Peacock finely mounted on decorated cherry stand, for Indian relics. Axes, pipes, small western arrow points preferred. All answered. Wm. W. RADLEY, Rural, Wis.

LOOK:—Relics, \$10; L. and F. W. shells, \$10; minerals, \$10; mounted birds, fossils, others. Want good watch, bicycle or camera. Write, ELLA KELSO, Orting, Wash.

CORRESPONDENCE solicited with collectors wishing eggs in sets or singles or other Natural History specimens from this section. Address, A. H. W. NORTON, Box 918, San Antonio, Texas.

WANTED:—Eggs in sets with nests of all Warblers, Waders, Vireos and Thrushes. Send list of what you have and cash or exchange price. Send 10c for large illustrated catalog. CHAS. K. REED, 75 Thomas St., Worcester, Mass.

A FEW skins of star-nosed and hairy-tailed mole for other moles or shrews. Birds for smaller mammals. D. D. STONE, Lansing, N. Y.

WANTED:—All lovers of curios to have a set of the following eggs: Snapping Turtle, 2-14 1-16 1-17 1-31 1-28 1 26 1-29 1-41. Red-leg Turtle 5 6 2 7-2 8-2-9, 3 cents per egg. All first class data. On approval. JAS. O. JOHNSON, Southington, Conn.

COLLECTORS:—If you wish anything in the sporting goods line please let me know your wants. I may save you money. I have some fine collecting guns at reasonable prices. JAS. O. JOHNSON, Southington, Conn.

WANTED:—A1 sets of A. O. U Nos. 47, 54, 59, 289, 310, 326, 339b, 346, 620. Can offer sets with data. A. H. MILLS, West Rutland, Vermont.

FOR SALE:—Hunting Coats, 8 oz. canvass, seven outside pockets and two inside game pockets. Corduroy collar, cuffs lined with corduroy. Made in 34, 36, 38, 40, 42, 44, 46 inch chest measure. For hunting and collecting there is nothing better. Price \$2.50 each. I have canvass pants to match coat at \$1.65 per pair. Please remit by post office money order or cash. JAS. O. JOHNSON, Southington, Conn.

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| Mew Gull, sets of 3, per set | 35 |
| Glaucous Gull, sets of 2, per set | 75 |
| Manx Shearwater, sets of 1, per set | 25 |
| Cormorant, sets of 4, per set | 50 |
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| Old-squaw, sets of 7, per set | 1 25 |
| Barrow's Goldeneye, sets of 10, per set | 2 50 |
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All by express at purchaser's expense.

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| Bendire's Thrasher, data..... | 20 |
| Great Horned Owl, data..... | 35 |
| Short-eared Owl, American, data..... | 40 |
| Willow Ptarmigan..... | 46 |
| Glaucous Gull..... | 25 |
| Krider's Hawk, data..... | 40 |
| Kittawake Gull..... | 18 |
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| Horned Lark..... | Hoary Redpoll |
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| Labrador Jay..... | Old Squaw |

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| Lesser Scaup..... | American Scaup |
| Sandhill Crane..... | Little Brown Crane |
| Wilson's Snipe..... | Wilson's Phalarope |
| Yellowlegs..... | Semipalmated Plover |
| Willow Ptarmigan..... | Canada Grouse |
| Sharp tailed Grouse..... | Broad winged Hawk |

and others.

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VOL. XVII. NO. 1.

ALBION, N. Y., JANUARY, 1900.

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A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND
TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

Correspondence and Items of Interest to the student of Birds, their Nests and Eggs, solicited from all.

TERMS OF SUBSCRIPTION:

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Subscriptions can begin with any number. Back numbers of the Oölogist can be furnished at reasonable rates. Send stamp for descriptions and prices.

Remember that the publisher must be notified by letter when a subscriber wishes his paper stopped, and all arrearages must be paid.

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12 lines in every inch. Seven inches in a column, and two columns to the page.

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A Bird House.

In the May and June, 1896 number of the Oölogist was an interesting article, "The History of a Bird House," by H. G. Parker. This article, with the fact

that I have a particular liking for the Purple Martin (*Progne subis*) helped to influence the writer to erect a bird house in the corner of the yard, in front of my boyhood home in Farmington, Me., for the purpose of having a better chance to study these interesting birds that were seen about the place for a few days in the spring, but having no house to go to, went to some other locality to breed.

So in the spring of '87, before the birds arrived, I built a plain white house of good size, with five apartments, and spacious steps before each door for the birds to alight on, and a place to sit on before the door and sing. This I made fast to a long pole and placed in the corner of the yard and facing my own room that I might sit in the window and look out upon this house. The many quarrels I witnessed as well as the cheerful songs I listened to from my window more than repaid me for erecting the house.

About the middle of April the house began to make history in the way of a pair of White-bellied Swallows (*Tachycineta bicolor*) that had nested in a hole in the limb of an apple tree in the orchard near by for several years, before coming to this house. Here let me mention that the locality was on the top of large hills, high up, and about one mile from any body of water. This swallow usually nests near a body of water.

On the arrival of these swallows they took it for granted that this house was erected for their special benefit, and took possession with very little ceremony. They began to carry dead grasses to the upstairs rent, and later profusely lined the nest with feathers.

They completed their nest and were ready to lay their eggs about the first of May, when a pair of Martins came. The Martins seemed to think their cousins, the swallows, were out of place in leaving their old site and taking the home that was built for them, and a quarrel was begun. The female swallow would sit in the door, and the male perched upon the top of the house. The Martins circled about the house singing their song usually heard in the early morning.

The swallows stood quiet and resolute to defend their house and awaited an attack. Soon the Martins circled nearer and nearer and made an attempt to alight on the house, but were repulsed by the swallows. After one Martin had been prevented from forcing an entrance the other one would make an attack. At first they only swooped near the swallows as if to measure their adversary's courage and strength, but after a little manouevring they would grapple with a swallow and they would flutter over and over each other and fall to the ground, sometimes exhausted. But the swallow would at once return to its door stool ready for another attack. Whenever the male swallow would return to his mate he would caress her and chatter away as though telling her he had beaten the Martins. This would take place in the morning, and after two or three hours of hard fought battle the Martins would retire, leaving the swallows in possession of their well defended home. In the afternoon the Martins would return and make a shorter struggle, then leave till the next morning. This struggle went on for about a week and it was difficult to say which would be the victors, but after about a week's struggle the Martins forced several entrances.

They did not want the other apartments, but that very one the swallows occupied. Soon the swallows tired of the fight, and wishing to rear their

young in peace, also feeling that the Martins were getting the best of them, retired from the scene of battle and immediately built in the old site in the apple tree, leaving the Martins to occupy their newly acquired possessions. They were very proud of their acquired domains, and would sit at the entrance the swallows had occupied and sing as never Martins sang.

They did not remove all the nest of the swallows, nor did they occupy it, evidently thinking it too downy an affair for their use, but built one of coarse grasses, with a small quantity of mud intermixed, on the whole a rather coarse structure. They reared their young unmolested. In this locality they do not rear but one brood in a season, and leave in August for a warmer clime.

The next year the swallows returned April 17th, and made at once for the bird house. They staid about it, and soon began to build a nest in the apartment they had chosen the previous year, and seemingly had forgotten their unpleasant evacuation the year before.

They were very happy in building this nest as usual, and took the same trouble with it, and lined it very neatly as before, and succeeded in laying two eggs before driven out in the same manner as the year previous. But they had to go, and as before took up with the old site in the orchard.

In the spring of '89 the swallows arrived April 16th, and the same story was repeated as in the two years previous. After the Martins had left a belated Bluebird (*Sialia sialis*) built a nest in one of the lower apartments and reared a brood of four young.

The spring of '90 the Swallows had four eggs laid, and incubation begun, before the Martins drove them out. The four eggs I found on the ground beneath the house were the Martins had thrown them.

Thus the struggle between these cousins went on for the next six years and I

began to think the swallows would get discouraged and give up the dispute. But the year of '96 the Swallows came near "holding the fort," the Martins not seeming to have the determination to win which they had previously shown. But in '97 the tables were turned and the swallows carried the day, and the Martins left for parts unknown.

The year '98 but a few days' struggle took place and the Martins left as in the year before. Last year the Martins appeared, but made but little effort to gain their old home.

Several times during the early years of this bird house the Bluebirds that nested in the orchard made a little fuss with the swallows. But the acts of the Bluebirds seemed more like their usual inquisitiveness, a habit they have of peering into every knot hole or cavity that they spy out. The Bluebirds were determined to peer into the apartments and would sometimes sit on the step outside and warble for a short time, then fly away. The swallows resented this, and sometimes a lively contest took place; but I do not believe the Bluebirds intended to monopolize the swallows' nesting site.

Twice I tried to end the contest between the swallows and Martins by removing the nest of the swallows, and thus help the Martins as I wanted the Martins to occupy the house, knowing that the swallows would nest in the orchard. Thus I could keep both birds about the place. But this did not help the Martins, for the swallows stuck to the place as determinedly as before until driven out.

This fall the strong winds blew the house down, but this does not I hope end the history, as my younger brother has re-erected it, and I hope to record further history of this house that has brought me so much pleasure and thought, for several years to come, as I spend part of my vacation on the place.

J. MERTON SWAIN,

Portland, Me., Dec. 16, 1899.

Louisiana Water-Thrush.

This shy and interesting bird arrives in this locality on the last days of April or early in May and almost immediately begins to build its nest.

It was in the early morning of May 21, 1899, that I mounted my wheel and took a spin over the hill to the mouth of a large gully, where I dismounted. Just over a large waterfall a Water-Thrush left the bank and flew up the stream as I came along. Going to the place she flew from I saw, placed in a little hole under the overhanging bank, a pretty nest of dried leaves deeply cupped and lined with dead pine leaves, grass and rootlets. It contained six eggs of a creamy white, thickly spotted with several shades of reddish brown and they were within a few hours of hatching. The bird kept out of sight in the bushes along the bank, but I could tell where she was for she continually sounded her alarm note, a sharp metallic *chink, chink*. But finally she came out in plain sight.

On up the gully in a secluded spot I saw a Water-Thrush, evidently her mate, sitting on a limb which was hanging over the water and he was singing such a wild spiritous song as I have heard from no other bird of my acquaintance. This song is one of the very best of bird songs and heard in the deep gully with the accompaniment of the running water there is nothing to compare with it.

Leaving this gully I went across the valley to another gully. Soon I heard the *chink* of a Water-Thrush and saw him running, teetering along the stream and pecking about nervously. Advancing cautiously I saw the female sitting on her nest in a hole in the bank. What a pretty picture she made as she sat looking timidly at me, until her fear getting the better of her, she flew to her mate, who had been trying his best to draw me away from the nest.

There were five young of nearly a week in the nest, which was of dead leaves, moss and hemlock twigs, lined with rootlets

Retiring a short distance I watched the old birds. They ran about, up and down before the nest, teetering all the time and drawing nearer to the nest each time until suddenly the female flew to the nest, staying but a moment then joined her mate again. After a little she flew to the nest again staying but a moment as before. Then both birds flew up and around me going down the stream.

On up the gully I saw another bird and soon found another nest, situated like the other in a little hole in the bank. It contained three eggs and two young just out of the shell. Going up stream about 40 feet I sat down to await developments. The female soon returned to the nest and the male came around near me. He had a worm in his bill and suddenly he flew to the nest but away again almost instantly, then after a little he flew to the nest again where he remained for some time. He stood on the edge of the nest poking his bill into the female's mouth, then glancing at me and teetering all of the time. After leaving the nest he flew to the ground quite close to me and then away he went after another choice morsel for his mate.

I found another nest June 2d which was under a little ledge formed by some roots and dead leaves beside a very small bush on the gully bank only three feet from the running water. The nest contained five fresh eggs and the female acted much as the others did.

About a week after this I was in a large swampy wood and Water-Thrushes were real common. We met several families. The young ones were just learning to fly and were closely watched by the old birds.

VERDI BURTCH,
Penn Yan, N. Y.

The Brown Creeper.

Certhia familiaris americana, Ridgw.

It always afforded me great pleasure while rambling in early spring through the woods to observe one of our liveliest little Creepers start at the foot of a large tree and run in zigzag lines to almost the [top of the tree. If he sees that he is observed he keeps on the off side of the tree instead of running up in spiral form, all the time scrutinizingly searching in the cracks of the bark for the tiny eggs of insects on which he lives. The strong tail feathers, similar to those of the Woodpecker, support his weight and the slightly curved and very tender but extremely sharp bill makes it easy for him to secure his prey. The bill, however, is not strong enough, as is that of the Woodpecker, to tear away the bark and chop holes in it to get at the worms, the borers and larva of the insects. While going over the different trees in search of food I hear him utter: "Zri, zri, zri" or "sit, sit, sit." These notes are only heard during the mating season.

The Brown Creeper is an expert climber and always watchful, searching every tree in his district from morn to night for food. On arriving at the top of a tree he invariably flies down to the next tree near the ground to repeat his upward search.

It seemed very difficult for me to find the nest and I also was in doubt whether the Brown Creeper breeds in this locality. In the first week in May, 1899, I was fortunate enough, by watching a pair of Brown Creepers in the Tonawanda Swamp, to see one step into a loop formed by the bark of an elm stump about 15 feet from the ground. I saw that the birds had started building the nest, but both being diligently in search of nesting material, I concluded not to climb to the nest but to wait a week and I was rewarded. A week later I found the male near the

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BIRDS EGGS; Singles.

| | |
|-------------------------------|------|
| Mew Gull..... | 35 |
| Western Gull..... | 40 |
| Skua..... | 75 |
| California Brown Pelican..... | 1 00 |
| Snowy Heron..... | 15 |
| Louisiana Heron..... | 15 |
| Little Blue Heron..... | 15 |
| American Coot..... | 10 |
| Oystercatcher..... | 75 |
| Curlew..... | 35 |
| Swainson's Hawk..... | 50 |
| Kingbird..... | 05 |
| Purple Grackle..... | 05 |
| Florida Grackle..... | 15 |
| Brewer's Blackbird..... | 05 |
| Purple Martin..... | 05 |
| Loggerhead Shrike..... | 15 |
| Bell's Vireo..... | 10 |
| Royal Tern..... | 50 |
| Red-breasted Merganser..... | 50 |
| Shoveller..... | 50 |
| Northern Elder..... | 50 |
| White-faced Glossy Ibis..... | 1 00 |
| Wood Ibis..... | 1 00 |
| Great Blue Heron..... | 40 |
| Green Heron..... | 15 |
| Bl'k-crowned Night Heron..... | 15 |
| Red-necked Phalarope..... | 75 |
| American Avocet..... | 50 |
| Black-necked Stilt..... | 50 |
| Whimbrel..... | 50 |
| Lapwing..... | 20 |
| Killdeer..... | 20 |
| Bob-white..... | 10 |
| Willow Ptarmigan..... | 1 00 |
| Ring Pheasant..... | 35 |
| Mourning Dove..... | 05 |
| Burrowing Owl..... | 20 |
| Florida Burrowing Owl..... | 1 25 |
| Road-runner..... | 25 |
| Golden-fr'ted Woodpecker..... | 25 |
| Cassin's Kingbird..... | 50 |
| Mexican Horned Lark..... | 75 |
| American Crow..... | 10 |
| Fish Crow..... | 35 |
| Starling..... | 10 |
| Red-winged Blackbird..... | 05 |
| Tri-colored Blackbird..... | 15 |
| Orchard Oriole..... | 15 |
| Boat-tailed Grackle..... | 05 |
| House Finch..... | 05 |
| Gray-tailed Cardinal..... | 35 |
| Painted Bunting..... | 10 |
| Yellow-breasted Chat..... | 10 |
| Meadow Pipit..... | 10 |
| Bewick's Wren..... | 25 |
| Mockingbird..... | 05 |
| Brown Thrasher..... | 10 |
| Red-leg Turtle..... | 05 |
| Moorhen..... | 15 |
| Mute Swan..... | 2 00 |
| European House Sparrow..... | 05 |
| European Tree Sparrow..... | 15 |
| European Blackbird..... | 05 |
| European Redstart..... | 05 |
| European Robin..... | 05 |
| Golden crowned Kinglet..... | 1 00 |
| Jackdaw..... | 15 |
| Rook..... | 15 |

| | |
|---------------------|----|
| White-throat..... | 05 |
| Chaffinch..... | 05 |
| Greenfinch..... | 05 |
| Yellow Bunting..... | 05 |
| Hedge Sparrow..... | 05 |
| Song Thrush..... | 05 |
| Missill Thrush..... | 05 |
| Sand Martin..... | 05 |
| Willow Warbler..... | 10 |

Sets.

| | |
|--------------------------------|-------|
| Gannet, 1-1..... | 50 |
| Green Heron 1-4..... | 60 |
| Bl'k-crow'dNight Heron1-3..... | 45 |
| Killdeer 1-4..... | 80 |
| Bell's Vireo 1-4..... | 60 |
| Yellow-breasted Chat 1-4..... | 40 |
| Brown Thrasher, 1-4..... | 20 |
| American Crow, 1-5..... | 50 |
| Lapwing, 1-4..... | 80 |
| Painted Bunting, n-5..... | 75 |
| Fulmar 1 1..... | \$ 75 |
| Mourning Dove 1-2..... | 10 |
| Boat-tailed Grackle 1 3..... | 45 |
| Red-winged Blackbird 1-4..... | 10 |
| Tri-colored Blackbird 1-4..... | 60 |
| Orchard Oriole 1-5..... | 30 |
| European Blackbird, 1-4..... | 25 |
| Yellow Bunting, 1-3..... | 20 |
| Chaffinch, 1-5..... | 30 |
| Greenfinch, 1-5..... | 30 |
| Redstart, 1-5..... | 25 |
| Song Thrush, 1-4..... | 25 |
| White-throat, 1-5..... | 30 |

SEA SHELLS.

| | |
|-----------------------------------|--------|
| Worm Shell, Gulf Mex..... | \$ 25 |
| Ark Shell, Gulf Mex..... | 15 |
| Bubble Shell..... | 05 |
| Helix Zebuensis, Philip'nes..... | 25 |
| Helix fideles, Oregon..... | 25 |
| Quoit Shell (½)..... | 05 |
| Magpie, Bahamas..... | 15, 35 |
| Many-lined Bulimulus..... | 05 |
| E. I. Clam (½)..... | 15 |
| Neritina reclinata, Fla..... | 5, 10 |
| Stair Case Cerithidea, Fla..... | 10 |
| Angel Wing (½)..... | 10 |
| Bulimulus Bahamaensis..... | 10 |
| Scarabus pyramidatus, Gm..... | 10 |
| Achatinella olivacea, Haw'ii..... | 10 |
| " spirizona, Hawaii..... | 10 |
| " uniplicata, Ha'ail..... | 10 |
| Calf Cowry, Australia..... | 10, 25 |
| Gnawed Cowry, Australia..... | 5, 10 |
| Caurl Cowry, Australia..... | 5, 10 |
| Crown Shell, Gulf Mex..... | 15 |
| Filletted Shell, Gulf Mex..... | 15 |
| Spiral Shell, Hayti..... | 10 |
| Rock Murex, Fla..... | 25 |
| Thorny-nosed Murex..... | 10 |
| Pink Murex, L. Calif..... | 75 |
| Black Murex, Panama..... | 25, 75 |
| White Murex, Zanzibar..... | 25 |
| Scoredd Murex, Bahamas..... | 10 |
| Woodcock Murex, China..... | 50 |
| Leaf-back " Med. Sea..... | 15, 25 |
| Japanese Eburna..... | 25 |
| Fish Basket, Japan 2 for..... | 05 |
| Foxhead, Singapore..... | 25 |

| | |
|--|-----------|
| Giant Fasciolaria, young..... | 10 |
| Fulgur perversa, young..... | 10 |
| Lettered Olive, Fla..... | 5, 10, 25 |
| Inflated Olive, Singapore..... | 5, 10 |
| Spider Web Olive, Cal..... | 5, 10, 25 |
| RiceShells, Fla. Keys, 12 for..... | 05 |
| Harp Shell, Ceylon..... | 50 |
| Dove Shell, Jamaica 3 for..... | 05 |
| Thunder Storm Shell 2 for..... | 05 |
| Lettered Cone, Ceylon..... | 35, 75 |
| Marbled Cone, Polynesia..... | 50 |
| Virgin Cone, Mauritius..... | 35, 75 |
| Miles' Soldier, Ceylon..... | 50 |
| Fighting Shell, Gulf Mex..... | 25 |
| Silverlip Mauritius..... | 15, 25 |
| Orange Scorpion, Poly..... | 25 |
| Violet-mouth " Molucas..... | 1.00 |
| Pelican's Foot, Med. Sea..... | 05 |
| Ringed Cowry, Singapore..... | 05, 10 |
| Snake head Cowry Aus..... | 05, 10 |
| Money Cowry Ceylon..... | 05, 10 |
| Mole Cowry, Zanzibar..... | 25 50 |
| Tiger Cowry, Australia..... | 05 |
| Rye Shell, Bahamas..... | 35 |
| Poached Egg, Fiji..... | 10 |
| Hump-backed Egg, W. I..... | 10 |
| Porcelain RumpSh'll, Bah..... | 05 |
| Paper Shell, Fla..... | 25 |
| Boat Shell, Mass..... | 05, 10 |
| Screw Shell, Calif..... | 10, 25 |
| Yellow Pea, England, 2 for..... | 05 |
| Brown Snail, Mauritius..... | 05 |
| Tower Shell, Cuba, 2 for..... | 05 |
| Bloody Tooth, W. I..... | 05, 10 |
| White Tooth, Tortugas..... | 05, 10 |
| Zebra Shell, Nassau, 6 for..... | 05 |
| Wheel Shell, Japan, 2 for..... | 05 |
| Goldmouth, Philippines..... | 15, 35 |
| Venetian Snail, Med., 6 for..... | 05 |
| Black Ear, Calif..... | 35 |
| Keyhole Limpet, Itah..... | 05 |
| Owl Limpet, Pacific..... | 15 |
| Band'd Tree Snail, Cuba..... | 5, 15, 25 |
| Black-mouth " 5, 10, 15, 25, 35, 50..... | |
| Hunch-back Partula..... | 05 |
| Little Agate Shell, Hawaii..... | 10 |
| Pea Nut Shell, Cuba, 3 for..... | 05 |
| Banded Melampus 3 for..... | 05 |
| Mermaid Cradle, Pacific..... | 25 |
| Sun Shell (pair), W. I..... | 15 |
| Pacific Scallop (½) Calif..... | 15 |
| Jewel Shell (½) Australia..... | 10 |
| Jingle Shell, Mass., 2 for..... | 05 |
| Venus Shell, Calif..... | 25 |
| Thorney Chama, Bahamas..... | 15 |

SEA CURIOS.

| | |
|-------------------------------|------------|
| Tail of King Crab..... | 5, 15, 25 |
| Brown Scaley Gorgonia..... | 15, 35 |
| Bahamas..... | 15, 35 |
| Finger Coral, Hayti..... | 15 |
| Red Coral, Sandwich Is..... | 10, 25 |
| Pink Coral, Samoa..... | 10, 25, 35 |
| Spike Coral, Bahamas..... | 10, 25 |
| Rose Coral, W. I..... | 20 |
| Mushroom Coral, Gulf Cal..... | 25 |
| Propeller Coral, Bahamas..... | 10, 25 |
| Branch Coral, E. I..... | 5, 10, 15 |
| Organpipe " Singapore..... | 10, 25 |
| Precious Coral, Med. Sea..... | 25 |

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| | |
|---------------------------------|-----------|
| Golden Sea Fan, Pacific..... | 75 |
| Yellow Sea Fan, Nassau..... | 25, 50 |
| Purple Sea Fern, Key West..... | 75 |
| Armor Starfish, Panama..... | 50 |
| Compass Starfish, Chili..... | 25, 50 |
| Golden Starfish, Pacific..... | 50, 1.00 |
| Club-spined Urchin Bah..... | 25 |
| Giant Purple do, Pac..... | 50, 1.00 |
| Spined Pur. Urchin, G. Mex..... | 25 |
| Key-hole Urchin, G. Mex..... | 25 |
| Philippian Urchin, Phil..... | 15, 25 |
| Curio Sponge, Bahamas..... | 25 |
| Egg Case Periwinkle..... | 15, 25 |
| Acorn Barnacles, Pacific..... | 15, 25 |
| Sea Horse, Med. Sea..... | 50 |
| Sea Horse, Pac..... | 50 |
| Pipe Fish (very fine) Pac. 1 | 50 |
| Skate or Sand Shark Egg..... | 05 |
| Hermit Crab in Shell..... | 25, 50 |
| Luck Tooth of Cod, Atlan..... | 05 |
| "Eye Stone," Gulf of Mex..... | 05 |
| Alligator Teeth, Fla..... | 5, 10, 25 |
| Tarpon Scales, 2 for..... | 05 |

FOSSILS.

| | |
|--|---------------|
| Diatomaceous Earth, rich in <i>Polycestina</i> , Barbadoes, 1 decum..... | 25 |
| Baculites, section, Dak..... | 50 |
| Crinoid Stem, Ind..... | 25 |
| Belemnites, section, N. J..... | 05 |
| <i>Rhynchonella capax</i> , Ind..... | 05 |
| Polyp Coral, N. Y..... | 10, 25 |
| Shark Tooth, Va..... | 5, 10, 15, 25 |
| <i>Spirifer varicosus</i> , Ind..... | 10 |
| <i>Ouent</i> , Ind..... | 25 |
| <i>Pentremites Godoni</i> , Ky..... | 10 |
| <i>Anchocrinus bulbosus</i> , Ind..... | 25, 50 |

| | |
|---|------------------|
| <i>Atrypa reticularis</i> , Ind..... | 25 |
| <i>Athyris vitata</i> , Ikd..... | 05 |
| <i>Scaphites nodosus</i> , Montana..... | 10, 25, 50, 1.00 |

MINERALS

| | |
|--|--------------|
| Zircon Xtals..... | 35 |
| Ferruginous Quartz, dbly. term Xtals..... | 35 |
| Halite Xtals, faceted cubo-octohedron..... | 75 |
| Hanksite, button Xtals..... | 25, 75 |
| Thernardite Xtals..... | 25, 35 |
| " " crosses..... | 50 |
| Barite Xtals, Bad Lands..... | 35 |
| Tourmaline Xtals, N. Y..... | 25, 50 |
| Satin Spar, England..... | 10, 25 |
| Calcite Xtals, England..... | 25, 50 |
| Quartz Xtals, Ark..... | 25, 50, 1.00 |
| Malachite and Azurite, Ariz..... | 25 |
| Cone-in-Cone, N. Y..... | 10, 25, 50 |
| Dog-tooth Spar, N. Y..... | 25 |
| Pearl Spar, N. Y..... | 25 |
| Iceland Spar..... | \$ 10 |
| Pryope Crystal, Dak..... | 10 |
| Chialstolite Crystal, Calif..... | 10 |
| "Electric" Stone, N. Y..... | 25 |
| Coquina, Fla..... | 10, 25 |
| Chalcedony Geode, Dak..... | 35 |
| Green Fluorspar, N. Y..... | 10, 25 |
| Native Lodestone, Ark..... | 10, 25 |
| Mexican Onyx..... | 10, 25 |

GEM STONES; Cut and Polished Semi-precious Stones

| | |
|--------------------|------------|
| Sard Intaglio..... | \$ 10 |
| Opals..... | 15, 25, 50 |

| | |
|-------------------------------|-----------|
| Red Onyx..... | 10 |
| Black Onyx..... | 10 |
| Crocidolite (Tiger Eye)..... | 10, 25 |
| Lapis Lazuli..... | 15, 25 |
| Chalcedony..... | 10, 25 |
| Tinted Chalcedony..... | 15 |
| Tree Chalcedony..... | 10, 25 |
| Red Ribbon Agate..... | 5, 10, 25 |
| Black Ribbon Agate..... | 5, 10, 25 |
| Moss Agate..... | 10, 25 |
| Wood Agate..... | 15 |
| Fossil Coral..... | 10, 25 |
| Bloodstone..... | 15, 25 |
| Succinite (Amber) Baltic..... | 25 |

MISCELLANEOUS.

| | |
|--|--------|
| 10 big U. S. copper cents, different dates ('30's-'50's) | \$1 00 |
| V-Nickel '83, without "word cents"..... | 25 |
| Brazilian Beetle..... | 25 |
| Nest of Painted Bunting..... | 35 |
| Black Sea Bean, W. I..... | 05 |
| Yellow Sea Bean, W. I..... | 05 |
| Chinese Coin..... | 05 |
| Horn Nut, China..... | 05 |
| Liver Bean, Bahamas..... | 10 |
| Brown banded Sea Bean..... | 05 |
| Red Sea Beans, W. I., 2 for..... | 05 |
| Big Tree Bark, Cal..... | 25 |
| Gun Flint, Revolutionary..... | 25 |
| Resurrection Plant, Mex..... | 15 |
| Tapu Cloth (bark) Samoa..... | 10 |
| Clay Police Whistle, Mex..... | 10 |
| Cuban Stamps, 7 var..... | 25 |
| Sheet 25 selected 1c stamps..... | 25 |
| " " 2c..... | 50 |
| Arrowhead, Ark..... | 10 |
| Skin of Snow Bunting..... | 40 |

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BIRDS.

| |
|--------------------------------|
| Anhinga..... |
| American Avocet..... |
| Red-winged Blackbird..... |
| Bluebird..... |
| Mountain Bluebird..... |
| Bobolink 3..... |
| Indigo Bunting..... |
| Lazuli Bunting..... |
| Painted Bunting..... |
| Cardinal..... |
| Catbird NE..... |
| American Crossbill 2..... |
| Chickadee..... |
| Canvas-back..... |
| Yellow-breasted Chat..... |
| American Crow..... |
| Yellow-billed Cuckoo NE..... |
| Mourning Dove..... |
| Wood Duck..... |
| Bald Eagle..... |
| American Flamingo..... |
| Flicker..... |
| Scissor-tailed Flycatcher..... |
| Vermillion Flycatcher..... |
| American Goldfinch..... |
| White-fronted Goose..... |
| Bronzed Grackle..... |
| Pied-billed Grebe 2..... |
| Evening Grosbeak..... |
| Rose-breasted " 2 NE..... |
| Ring-billed Gull..... |
| Marsh Hawk..... |
| Snowy Heron..... |
| Allen's Hummingbird 2 N..... |
| Ruby-throated "..... |
| Arizona Jay..... |

| |
|-----------------------------------|
| Blue Jay..... |
| Slate-colored Junco..... |
| Kingbird..... |
| Belted Kingfisher..... |
| Ruby-crowned Kinglet..... |
| Horned Lark..... |
| Smith's Longspur..... |
| Mallard 3..... |
| Meadowlark NE..... |
| Red-breasted Merganser..... |
| Mockingbird..... |
| Nighthawk E..... |
| White-breasted Nuthatch..... |
| Baltimore Oriole N..... |
| American Osprey..... |
| Great Horned Owl..... |
| Screech Owl..... |
| Gambel's Partridge 3..... |
| Wilson's Phalarope 2..... |
| Golden Pheasant..... |
| Ring Pheasant..... |
| Phoebe NE..... |
| Wood Pewee NE..... |
| Belted Piping Plover 3..... |
| Ring Plover..... |
| American Robin..... |
| Yellow-bellied Sapsucker..... |
| White-winged Scoter..... |
| Loggerhead Shrike N, Skylark..... |
| Snowflake..... |
| Sora..... |
| English Sparrow..... |
| Song Sparrow NE..... |
| Barn Swallow NE..... |
| Chimney Swift NE..... |
| Scarlet Tanager..... |

| |
|----------------------------------|
| Summer Tanager..... |
| Green-winged Teal..... |
| Black Tern 2 E..... |
| Brown Thrasher..... |
| Hermit Thrush..... |
| Wood Thrush..... |
| Yellow-billed Tropic Bird 3..... |
| Wild Turkey..... |
| Turnstone..... |
| Verdin N..... |
| Warbling Vireo..... |
| Yellow-throated Vireo..... |
| Turkey Vulture 2..... |
| Yellow-legs..... |
| Blackburnian Warbler..... |
| Black-and-white Warbler..... |
| Cerulean Warbler..... |
| Kentucky Warbler..... |
| Prothonotary " 2 NE..... |
| Yellow Warbler NE..... |
| American Woodcock..... |
| California Woodpecker..... |
| Red-headed Woodpecker..... |
| House Wren N..... |
| Long-billed Marsh Wren 2..... |
| Baldpate..... |
| Least Bittern..... |
| Bob white..... |
| American Coot..... |
| Brown Creeper..... |
| Dickcissel 2 N E..... |
| Black Duck..... |
| Purple Finch..... |
| Blue-gray Gnatcatcher N..... |
| Canada Goose..... |
| Dusky Grouse 2..... |
| American Sparrow Hawk..... |

| |
|-----------------------------------|
| Great Blue Heron..... |
| White-faced Glossy Ibis..... |
| Arkansas Kingbird..... |
| Brunnich's Murre..... |
| Old-squaw..... |
| Oven-bird..... |
| Saw-whet Owl..... |
| Short-eared Owl..... |
| Mountain Partridge..... |
| Scaled Partridge 2..... |
| Wilson's Petrel..... |
| Silver Pheasant..... |
| Passenger Pigeon..... |
| Paintail 2..... |
| Snowy Plover..... |
| Lesser Prairie Hen 2..... |
| Bartmanian Sandpiper..... |
| Fox Sparrow..... |
| Roseate Spoonbill..... |
| Black-necked Stilt..... |
| Red-eyed Vireo..... |
| Bay-breasted Warbler..... |
| Magnolia Warbler..... |
| Arctic Three-toed Woodpecker..... |
| Downy Woodpecker..... |
| Ivory billed Woodpecker..... |
| Red-bellied Woodpecker..... |
| Loon..... |
| Tufted Puffin..... |
| Hummingbirds (3)..... |
| American Herring Gull..... |
| Bonaparte's Gull..... |
| Caspian Tern..... |
| Common Tern..... |
| Hooded Merganser..... |
| Redhead..... |

THE OOLOGIST.

"\$2.75 for \$1" OOLOGIST PREMIUM LIST, Continued.

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| | | | |
|---------------------------|----------------------------|----------------------|-----------------------|
| American Golden-eye | Cock-of-the-Rock. | American Ocoelot | Crab-eating Opossum |
| Sandhill Crane | Mandarin Duck. | Coyote | Geographic Turtle |
| Wilson's Snipe | Black Grouse. | Fox Squirrel | Duck billed Platipus, |
| Pectoral Sandpiper | European Kingfisher. | Red Fox | Kangaroo |
| Least Sandpiper | Blue Mountain Lory. | Mountain Sheep | Hoary Bat |
| American Golden Plover | Mexican Mot Mot | Raccoon | Swift Fox |
| Prairie Hen | Golden Oriole. | Pigmy Antelope | Hyrax |
| Prairie Sharp-ta'd Grouse | Australian Grass Parakeet | Gray Fox | |
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nest. He uttered no notes but ran up and down the nearby trees so as to be close to the nest. By quietly watching in I found that the loop of the bark was about 5 inches wide and in all about 6 or 7 inches long. All of the lower part was filled with a few small dry leaves, little twigs, the thickest like a knitting needle protruding about an inch on both sides of the loop, then a layer of fine soft pieces of bark, and interlined with plant fibers and wool and fine feathers. The cup of the nest, about an inch wide and four inches broad, was lined with the finest and softest down. To my joy the nest contained 6 small clear white eggs, spotted with reddish-brown, mostly around the larger end, 3 in form of a wreath and 3 with large spots. I have nest and eggs in my collection and prize them highly.

A week later I took a nest of Chickadee containing 8 eggs, and if I find time in the near future will give a description of same. As far as I know no description of these two species from this locality has appeared in print.

ED. REINECKE,
Buffalo, N. Y.

"The Oologist's Association."

Circulars are out relative to a proposed meeting of the members of the Oölogist's Association. This meeting will occur the present year if the plans of its promotors are successfully carried out, and I sincerely hope that there will be a representative gathering of the so-called Oölogists of America. Every bird lover in the United States has interests at stake in this forthcoming meet and all are interested in the points to be discussed.

But, Mr. Editor, there are many points at variance between the true lovers of birds and the so-called oologists, who in the main may much better be called "egg collectors" and in many cases "crank collectors" without

a particle of scientific interest. There are, most unfortunately, far too many cheap collectors of eggs, or wealthy buyers of their collections who have next to no knowledge of ornithology, and who think that the whole interest centers in amassing a lot of sets of bird's eggs with the accompanying data. Out of this class of fad collectors I say, if I had it in my power to prevent this indiscriminate collecting of eggs and amassing of large collections for private use I should make the power operative at once. And let me add that there are thousands of the true lovers of our feathered friends in this country who are anxious that congressional action shall be taken as to the protection of our birds against the fad collectors of this land. Indiscriminate collecting is getting altogether too common. It is a nuisance in the community and a menace to our future prosperity, notwithstanding that it is followed under the flimsy guise of so-called scientific collecting.

The writer has been a collector in his day, and takes pleasure in inspecting a new find, but there are limits, and after careful consideration the decision has been arrived at that the matter of egg collecting has been vastly overdone for many, many years. I am a friend to the birds and wish to promote their interests, and this article is written with the intention of appealing to the members of the "Oologist's Association" as well as to the masses to protect the birds of this country, our friends who are so much in need of protection.

What is oology anyway? If any class or set of collectors think that the comprehension of the word embraces the ordinary collector of bird's eggs, they are in error. Now let me express myself as to my opinion as to what constitutes an oologist. Oology, as an outdoor study is a branch of ornithology, and nothing more, and the man who presumes to elevate it above the study

of birds is as foolish as those who profess to be good ornithologists without knowing anything about the nesting habits of the common birds they study. As I understand it a capable ornithologist must understand the nidification of birds of his section, while the egg collector should be able to identify the owners of the nests which he studies. But how often we find the so-called oölogists barely capable of naming the bird by the egg, while thousands of them would not be able to name the bird if they saw it away from the eggs. That this is true all observers of this class of fad collectors are fully aware.

Many collectors gather eggs, as they do all other specimens just because their acquaintances are engaged in the business, as it is too often called. I am sorry to say that fully ninety-nine boys out of one hundred would not collect eggs were they not stimulated by the efforts of acquaintances. Thus the censurable pastime goes on to the detriment of our happy songsters.

Let me say a word about work in the field. You may be a most enthusiastic bird's egg man with a wish to devote all your time to a study of eggs and nests, but let me tell you that it is more to the purpose if you will also observe in other departments of natural history. In a short time you can familiarize yourself with the reptiles, mammals, insects and plants as well as adding valuable notes to your betterment. No one can afford to be in the woods without a note book if he ever expects to become a well versed nature-lover. After a year's effort at this advanced work you could not be hired to omit the note book from your rambles.

Amateurs are too liable to rush into collecting with a zeal which is more a result of collecting greed than it is from a real scientific love of the study. Thousands of foolish boys and young men slash into the birds and eggs for a season or so, intent only on securing

all they can, and desirous of outshining their companions in the nefarious fad. Such as these rarely make true lovers of the study; the class however, is a large one. I wish there was a law for the imprisonment of all the collectors of this class, or rather a law that could be made operative with their parents. Laws there are plenty of them, but one rarely hears of prosecution.

There should be a shut down on all nest robbing by boys and by many older persons, people old enough to know better. Parents, guardians and teachers should give strict orders in reference to bird protection, and as well by instruction give the children a love for the birds and other creatures of the wood and field; teaching the boys and girls to observe and study and not to destroy. It is always a pleasure for me to converse with an observing child or older person, but it is distasteful to any lover of our feathered friends to look over a collection of poorly prepared eggs and skins, many improperly identified, and nearly all of which the collector knows nothing of excepting the meager notes embraced in the data blanks. When the boy or man stoops to this style of collecting, and I am sorry to say that there are many of them among us, he is as low as the thoughtless women who make use of feathers for adornment. Now boys and all others may render a valuable service in the line of nature study if they will go at the matter in the right manner.

This article is already too long, but I hope others will take it up and advance the cause that is herein advocated. Let us hope that the Oölogist's Association, if it meets, will take action to protect the birds and eggs and not to confine their attention too fully to the consideration of matters that generally occupy the attention of the average fad collector and to the exclusion of truly economic interests.

Respectfully yours,
MORRIS GIBBS, M. D.

B. F. Bowdish Dead.

At the breaking out of the war between the United States and Spain, among the volunteers from this section was Beecher S. Bowdish, who enlisted with the National Guard of the state of New York, going with the Geneva company. Although the company never reached the front, but spent its time subject to call at Camp Black and in Virginia, he remained ready for duty until the company was mustered out. Following a short stay here at home, he reenlisted in the 11th Infantry, becoming a private in Company E. and was ordered at once to Porto Rico, where he has been on duty since last spring. During his sojourn there very interesting letters from his pen have been received, giving minute descriptions of soldier life, the habits and customs of the natives, together with a full description of the country, its scenery, products and other interesting features.

Yesterday morning the regular communication from Mr. Bowdish, under date of December 18, was received, and with it a note dated Viegues, Porto Rico, December 22, which reads as follows:

"I regret to have to inform you of the loss of Private Beecher S. Bowdish, the news having just been brought in by a native that Private Bowdish, while in a boat with two natives, was capsized and drowned. I believe news has been sent to headquarters at San Juan and from there to his relatives.

Yours respectfully,

"OSCAR V. ROWE,
Company E, 11th Infantry."

Mr. Bowdish leaves a father and mother, formerly of this place, but now residing in New York City.—*Phelps. N. Y. Correspondent in Rochester Herald, Jan. 6th.*

Death of Elliott Coues.

Elliott Coues, the naturalist, died at Baltimore on December 25, and in his

demise American science has lost one of her greatest men. He was born in Portsmouth, N. H., in 1842. His father, Samuel Elliott Coues, was the author of several scientific treatises of great value, so that Elliott Coues the younger came naturally to study science. He graduated from the Columbian University in 1861, and from its medical department in 1863, and entered the United States Army as medical cadet and was appointed by Surgeon-General Hammond as Assistant Surgeon in the United States Army, retaining that office until his resignation in 1881. His first post of duty was in Arizona and then in Colorado and Illinois. In both stations he investigated the natural history of the region and published several important papers. In 1873, he was appointed Surgeon and Naturalist of the United States Northern Boundary Commission which surveyed the line along the 49th parallel from the Lake of the Woods to the Rocky Mountains. After his return to Washington he published, in 1872, his "Key to North American Birds," and in 1874, "Field Ornithology." His reputation as a naturalist now became thoroughly established and he was appointed as secretary and naturalist of the United States Geological Survey under the late Dr. F. V. Hayden. He edited the publications of the Survey from 1876-1880, meanwhile conducting explorations in the West. He published "Birds of the Northwest" in 1874, "Fur-Bearing Animals" in 1877, and "Birds of Colorado Valley," 1878. He was ordered by the War Department to the frontier, but his services to science were so important that he tendered his resignation and continued his scientific career. He was a member of most of the scientific societies of the United States and many of Europe. He was elected to the chair of anatomy at the National Medical College, in Washington, and pursued some of his favorite studies for ten years, teaching human anatomy upon the broad basis of morphology and upon the principle of evolution.—*Scientific American.*

Notes on the Yellow Warbler.

On the first of May, 1899, I arose at about three o'clock and started on a long stroll, keeping my eyes and ears open all the time for my feathered friends.

When after a walk of about a mile and a half without seeing much of interest, I came to a cow pasture of a few acres in extent, overgrown with small thorn bushes and briars.

After climbing the fence, I sat down on a log to rest and listen, and was rewarded by hearing the song of several Yellow Warblers (*D. aestiva*) and after a search of a few minutes, I had found three nests just completed and several more just commenced.

I sat down and watched them building, most of that morning and noticed that both the male and female carry the material of which their beautiful nests are constructed.

The female, however, seems to be the architect and builder, commencing by weaving a small ring about two inches in diameter out of coarse grey fibres of the milk weed, by way of foundation, and then builds the nest proper by taking fine fibres in her bill and turning around and around, pushing and weaving it into the foundation ring and felting it together.

While watching a pair building, a Cowbird flew into a nest just completed and deposited one of her eggs. The owners of the nest on returning showed every sign of anger, trying to throw the egg out, but in vain, as the nest was a very beautiful one, about two and one-half ($2\frac{1}{2}$) by three and one-half ($3\frac{1}{2}$) inches outside by one and three-quarters ($1\frac{3}{4}$) in diameter by two (2) inches inside.

After chirping a while to each other and both trying to rid the nest of the unwelcome egg, they both flew away and did not return again that morning.

I was so interested in what I saw that morning, that on May 15th I returned

to the pasture again and observed that where the birds were building on May 1st and the birds had seen me so much as touch the uncompleted structure, they had torn it down and moved it to some other place.

But what of the nest with the Cowbird's egg in it? Well, the birds had built another nest right over the first one, Cowbird's egg and all, making a double nest seven (7) inches long by two and one-half ($2\frac{1}{2}$) inches in diameter, the upper story of this nest containing five (5) fresh eggs.

After this date I returned every day until the eggs began to hatch to observe these beautiful little songsters.

After having seen the fight put up by this pair of the double nest against the intruding Cowbird, I thought I would try some of the other nests with Cowbirds' eggs.

So I placed an egg in two (2) other nests which were just completed and in both cases the Warblers left the nest and built another.

But in six (6) nests which contained one or more Warblers' eggs they did not seem to notice the egg in the least.

I spent many hours this summer watching *D. aestiva*, for which I feel well repaid.

PAUL MORRIS,
Alliance, Ohio.

Purple Finches in Mississippi.

On February 14, 15 and 16, 1899, while the thermometer ranged from 5 degrees above to 2 below zero, a flock of thirteen Purple Finches, six males and seven females were seen here by myself.

During the cold weather the birds stayed in an evergreen tree and gorged themselves with the frozen berries.

The birds were quite tame and would let anyone come within five or six feet of them.

This is the first time I have ever heard of the birds being seen in the state.

ALBERT F. LANIER,
Vicksburg, Miss.

A Few Suggestions for the Preparation of Trophies.

Having been an enthusiastic taxidermist and collector for many years, it follows that I have preserved many specimens of the forest, field and stream as trophies. It has occurred to me that a few suggestions on the preservation of objects of natural history might not go amiss, and perhaps be appreciated by your readers. If acceptable, a series of short articles will be presented upon this subject, so that those who wish may save their trophies of the outing. In my travels the fact has been repeatedly brought to my notice that but very few of the heads and horns, fish heads, and feathered game are preserved, even where the specimens are easy to secure, and where the trophies would assist in decoration and to blazon the glory of a locality or resort. It can not be understood by one interested in our animals, fish and birds why hunters, anglers and outdoors do not preserve the beautiful plumage of their game birds and the big pike and trout.

Short directions will be given for the preservation of fish heads. Any fish can be preserved in a very few minutes so that it will last a thousand years by the simple introduction of a small quantity of my preservative compound; but if a good specimen is desired a greater amount of attention is necessary. It is not best to attempt an entire fish the first time, but the head may be easily and satisfactorily preserved. Cut the head off just back of the gills, where it is usually divided when dressed, and remove the flesh that can be easily cut out, also the eyes. If the head is large it is better to cut out some pieces of flesh along the inside of the jaws, which may be easily done, and the slit sewed up later. These slits should be cut on the inside of the mouth so that they will not show, and this method of working on the inside should always be followed. Now rub the inside of the mouth, eye-sockets and all the denuded parts where the flesh was removed with the preservative compound, and it is better to force some into the brain through the spinal hollow if the fish weighs ten pounds or more. Your head is now preserved and will last a thousand years, and will keep out doors as well as in the house. It can not spoil, for it is as fully preserved as an Egyptian mummy. Most anglers wish to preserve their heads in better form, and in

following this out you may spend as much time as you wish, and I may add you will not regret the time spent if you have a head worth saving. We will suggest that you have a pike's head. Cut out a piece of board, better half-inch stuff, of the size of space at back of head where cut off, and tack in this piece as a foundation, and it will support the head and fit on the wall when you hang up the work. Next stuff out the jaws to the required extent with hay, excelsior or rags, get a pair of fish glass eyes and place them in sockets with putty, and hang up the head on the wall to dry. After it is dry, say from a week to a month, remove the stuffing, wash off, paint if desired and varnish if you wish to have a fresh appearance. The fish smell will stick to the head for a fortnight or more and will last a month more to an extent, but will then pass away forever, and you will have a trophy which will grace any apartment devoted to specimens, sportsmens' accouterments. Of course this is the work in the rough, but it is sufficient to succeed in all cases and all anglers may preserve their heads by this means. A head mounted in this manner will last forever, even if it is hung up out of doors, as I can prove in many instances where specimens have been left out. These fish, birds and animals have been tested in this manner all over the Union and are at the present time to be found exposed to the elements all over the country.

MORRIS GIBBS, M. D.

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VOL. XVII. NO. 2.

ALBION, N. Y., FEBRUARY, 1900.

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TAXIDERMISTRY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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A Robin Roost.

"Upborne with indefatigable wings,
Over the vast abrupt, ere he arrive,
The happy isle."

—Milton.

On first reading Mr. Torrey's most excellent article upon Robin Roosts, I was agreeably surprised to find that my town was the place of their nightly gathering, and on piecing the meagre description that was in the book, together, I soon made up my mind as to where the roost was, also, it then being as late as the first of September, to visit the roost without delay. Accordingly, on a cloudy Monday afternoon (the 11th), I wended my way to the spot. I did not esteem it a particularly ideal spot for *Merula migratoria* to assemble, not being especially private, or especially adapted as far as I could see. But, then, we are very apt to measure others from our own feeble penny-weight scale, and, no doubt, the traditions of the robins forbade any undue change of location. The robins' motto seems to be, "Let well enough alone." A good one from more than one point of view. "Besides," the first robin seemed to say, as he dropped boldly over my head, "we at least are not skulkers, we leave that for our betters." "Let all who hate us come and look upon us."

I had arrived just after sun down and the robins were coming plentifully when I appeared upon the scene. The roost was a large clump of white oaks, maples and birches, bounded on the south by a wet meadow, on the east by a small pond and on the north and west by a public road and small undergrowth. It commenced to rain before I had been there long, not a decided rain, but a gentle "insinuating" downfall, which seemed in doubt whether it should continue or not. The robins which were coming, in force, from the first, came faster and faster and the rain and dusk descended more swiftly, until finally, I

decided that "discretion is the *best* part of valor," and turning up my coat collar I ignominiously fled. As I looked back, the tide of robins seemed in no way diminished. In all I counted 653.

My next venture, on the 13th of September, was of a more successful nature, I being accompanied by a friend and arriving earlier on the spot than on the previous occasion. When we crossed the narrow meadow it was 4:30 o'clock, and the sun had not yet sank, so we had a fine chance for operations. My friend and myself stood side by side to count. At first there were only a few birds which we could see on the horizon, a mile away, coming toward us. Little black dots they looked and on nearing us, they either stopped at the outlying fringe of woods that bounded the meadow, or plunged over into the roost, taking, however, great care to give us a wide berth, either swinging to one side or passing over if they were high enough. The greatest numbers came at dusk and as we could only see those on the skyline and only counting on the south side of the roost, it is safe to say that at least five times the number we counted entered the roost. They made no noise, except, perhaps, an inquiring pit, pit, as they flew past us. An appreciation of the difficulties of the count can only be experienced by those who have tried it for themselves. On this evening we counted 956 robins all told.

About September 18, we made another count, but saw only about 720 odd birds.

It is evident, that most of those of the 13th were migrants on their way south, and used the roost as a sort of rendezvous on their south and northward journeys.

By September 26, their numbers had decreased to 126, and by October 7, the roost was deserted.

By comparing these statistics with Mr. Torrey's, it will be readily seen that this roost has apparently increased since 1890. Whether this is due to a warmer

spell of weather in the September of '99, or whether the roost has actually become more populous is a matter for conjecture, sufficient to say that on September 13, 1890, Mr. Torrey counted 137 robins, while on that same date, 1899, I, with a friend, counted 956, and almost two weeks later, September 26, 1899, I counted almost as many as he did on September 13, 1890, he counting on the 13th 137 against my 126 on the 26th.

This is also true, but not to so marked a degree of the only other roost I know of, namely, that at Belmont, in Middlesex county.

It is conceded by all that a love of company or gregariousness is one of this thrush's most prominent characteristics. He is a veritable socialist among birds. Not so much in the sense we use the word, as the word itself implies. He is the burglar among birds, the honest steady-going farmer, with his loud and hearty voice, and his cherry waistcoat, which by the way, is not nearly so much in bad taste as some of the apparel worn by the human species on certain out-door occasions.

Other songs may charm our ears, other beauties delight our eyes, but we will never desert our steadfast friend, the robin. No! Not even if we own a cherry tree.

Bird Life in a City Yard.

When I was a lad one of the pleasures was in observing the birds of our neighborhood, and the first annotated list which I began was on those species noted in my father's yard in the heart of the village. The list rapidly increased, and now after almost continued observation, covering a period of more than thirty years, it has grown to "the big-gness you see," embracing one hundred and thirty-four species. The list is presented as interesting evidence of what may be accomplished through continued observation.

The yard where the notes were taken is almost exactly 5 x 12 rods in size, and in nearly the exact center of the corporate limits, which were two and a half miles square at the time when the list was begun, in the village of about 5,000 inhabitants; but at present we have a city of over 25,000. A house, barn and shed were situated on the old homestead, and several evergreens, maples, burr oaks, apple trees, and a row of cherry trees, together with currant and raspberry bushes and other shrubs, and a flower and small vegetable garden filled in the space of this typical village home. Time has greatly changed the flora and fauna, and naturally, many species of birds which formerly frequented the yard, either as regular visitors, spring and autumn, or as occasional transients are now seen no more, an undoubted result of the increased size of the city with the consequent removal of the forests surrounding the corporation. Notwithstanding the changes resulting from over thirty years in a thriving manufacturing city, there are still many species which visit us each year in migrations from the south, and a few which are fairly regular in their appearance in the winter, and there still occur occasional surprises in the appearance of little expected species.

This list embraces the species of birds seen within the enclosure of about sixty-one square rods, or observed flying above the yard.

In addition to the list presented, there are a dozen or more others which I have recorded, but feel uncertain of and so do not embrace.

Among the divers the common Loon, Red-throated Loon and strangely enough the Pied-billed Grebe, were seen flying over; the latter an unusual sight in migrations.

Of the gulls, the Herring was repeatedly seen, supposedly of the variety, and the Bonaparte's.

Few of our twenty odd species of ducks were identified among the thousands which flew over, as they generally migrate at night. However, I have distinguished the Goosander, Butterball, Pintail, Wood Duck and Mallard. The Whistling Swan has been observed sweeping over, and of the geese, the Common Brant, Snow Goose and Canada Goose have been observed, the two latter still annually observed.

Passenger Pigeons, so abundant formerly, were frequently seen in immense flocks, both spring and autumn, and when these misused birds nested in the vicinity of Kalamazoo I have known the young to straggle into our yard and once noted one which made its home in the neighborhood for several days. An occasional Mourning Dove was seen to flit by. A good sized flock of Ruffed Grouse flew bewildered into our yard, and one which came in contact with the house was stunned and captured. It was not rare to see Bob-whites in the village years ago, and they visited our lot on one occasion. These birds are still found to wander into the city, and when not molested remain for some time. It may be mentioned that within the last year that a woodchuck was captured within twenty rods of this yard and less than twice that distance from the post office. There are many other instances which point to the fact that the wild creatures, if given a chance, will associate with us.

Golden Plovers fly over in autumnal migrations. Occasionally I hear a Semi-palmated, and also the Least, Pectoral and Spotted Sandpipers as they wing their way in the dark, while the well known call of the Killdeer is often heard. The form of the Woodcock was once seen at dusk, while the towering Snipe was not rare twenty years ago, but it now confines its mating flight to the marshes. Field Plovers and Greater and Lesser Yellow-legs have been recorded from their notes.

Among the long-legged waders the Great Blue Heron is the only representative, and an immature was killed with in gun shot of our fence, and which had perched in our tall oak just previously. A Carolina Rail was found dead in the yard, as an evidence of the danger of migrating in the dark.

A Barred Owl rested in a tree in the yard. Marsh, Red-tailed, Red-shouldered and Sparrow Hawks have been seen flying over; a Cooper's Hawk was observed plying his trade among the excrecrated sparrows about four o'clock in the morning, and a Sharp-shinned Hawk was engaged in the same glorious work in broad daylight.

We have five species of "borers," which visit us each year; the Downy Woodpecker is hardiest of them all and is frequently seen in mid-winter. Next is the Hairy. Of the last three, the Golden-wing and Red-head are liable to visit the oaks of our yard at any date in the spring, summer and fall, while the Yellow-bellied is our visitor in spring and fall migrations, when it bores its numerous little holes for the exuding sap, especially in two weeks of the spring migration, when it is possibly a damage to the trees.

Nighthawks often fly over, as also the rattle-noted Kingfisher. The Black-billed Cuckoo is not rare, and the Yellow-billed species is one of the few birds that have been added within the last few years, as it is more abundant in this region than formerly. The gorgeous little Ruby-throated Hummingbird enlivens the garden and the vicinity of the potted plants. Swifts whirl in rapid flight above the house, and occasionally form their nests in our chimneys.

The plain little Phœbe is heard each season, while the dear melodious Wood Pewee quavers its sweet notes during the summer, occasionally nesting in the oaks. The clamorous Kingbird always appears, more often in summer, and af-

ter the nesting duties are completed. One Least Flycatcher has wandered into our yard, and I have observed one Olive-sided Flycatcher, which is very rare in Michigan, but there was no mistaking the peculiar notes, which heard once are never forgotten.

Bobolinks fly over, gushing forth in rollicking song, but never deign to alight. The stealthy Cowbird sneaks about, but I could never find that she ever made any of her unsolicited deposits in the nests of our yard. The Red-wing and Rusty Blackbirds fly over in straggling flocks, and the Meadowlark is observed above and sometimes rests in the oak tops. The Bronzed Grackle nested regularly in the evergreens before they were cut down, and still troop about in annually increasing flocks as the advantages of a city life are made known to them. Those beautiful and vivacious, as well as useful birds, the Baltimore and Orchard Orioles, both nested with us previous to the removal of the apple trees and sugar maples, and are still with us seasonally as singers. Straggling flocks of Crows fly over at all seasons, there being one hundred now where there was one a quarter of a century ago. Surely, civilization assists some species, even if it does produce extinction in some useful birds and mammals. Our Blue Jay is as abundant as formerly, and one of our old stand-bys, and his defiant scream is heard at all seasons of the year.

Among the large number of the sparrows the Purple Finch is one of the first musical species to appear from the south and he sometimes lends his presence on his way north. The Tree Sparrow is a rare visitor as he prefers the wilder sections. The Chewink has been observed but once in our yard. The White-crowned Sparrow is also a rare caller, though common outside the village. "Pea-bod-dy" is an annual loiterer, and offers his sweetest strains a little after his near relative, the White-crowned,

has departed. Chipping Sparrows are common about the hedge and piazza from April to October, and the Song Sparrow a fortnight earlier, and later, builds its nest two or three feet up in the hedge which bounds the lot on one side. A vision of color and loud but delightful song comes with the Rose-breasted Grosbeak, which has sung each season for several years, though I cannot imagine where they can nest in this neighborhood, for it is not suited to their requirements. Another singer is the Indigo bird, now seldom heard in the neighborhood. The sulphur coat of the Goldfinch is a pleasant sight to us, while the ubiquitous *passer* of imported fame is an eye-sore to the community. Of the sparrows which only appear in the colder months, may be mentioned the rare Evening Grosbeak, which visits lower Michigan at rare intervals and has been observed in our yard but during a single season. The Pine Grosbeak is another occasional winter straggler, while the red and white-winged Crossbills both visit our evergreens. The common Redpoll and Pine Siskin are occasional visitants, appearing a little after the Junco leaves us for the south, and about the time when the Snowflakes fly in compact flocks on their winter wanderings.

The cheering notes of the Red-eyed Vireo are to be heard each May, June and July, while the soul-thrilling, gurgling melody of the Warbling, and the clear penetrating staccato of the Yellow-throated Vireos are listened to with delight, though the latter singer does not nest in the neighborhood to my knowledge. That sweet singing bird of gorgeous plumage, the Scarlet Tanager, wanders into our domain in May while looking for a mate, and proves to us that a gaudy bird may sing divinely. The Cedarbird once built its nest in our old greening tree, and still appears irregularly in winter. The cherry trees were the attraction in summer, and the

mountain ash berries in cold weather. One White-rumped Shrike visited us years ago, and a Great Northern Shrike was captured in the winter.

Five species of swallows fly above our yard annually; the Barn, Eave, Tree, Bank and Purple Martin, the latter formerly nesting in a little bird house on the roof of the barn. The flights of these swallows are readily distinguishable. I think I have seen the Rough-wing flying, but it will not be recorded, for no species are embraced excepting those positively identified. The Prairie Horned-Lark is occasionally seen above in its undulating flight, uttering its cheery chirp.

During the migrations many species of warblers are noted as they pause on their journey to search for the insect food which is their reliance. There are thirty or more species of these little winged sprites in the county, but some of them have not visited our lot, as they are lovers of wilder sections. It is strange that the Wilson's White-browed and Cape May Warblers should be seen in the city. The Black-and-White Creeping, Black-throated Green, Yellow-rump and Blackburnian are the most frequently seen, and until recently were seasonally observed, while the Chestnut-sided, Red-start, Parula, Nashville, Tennessee, Yellow, Black-and-Yellow, Black-throated Blue, Bay-breasted, Yellow Red-poled and Oven-bird have only been seen at wide intervals, and some but once. At any time, from the earliest appearance in April to the latest visit of the Tennessee in late May warblers are of almost daily occurrence in the enclosure; and again in September there are flocks which frequently embrace two to four species. But none of the warblers ever remain in the neighborhood during summer.

That little busy-body, the House Wren, is a seasonal visitor, and once nested on the premises. Golden-crowned and Ruby-crowned Kinglets appear spring

and fall, and enliven us with their active movements, while the beautiful notes of the latter are heard each season. The Gnatcatcher in spring and that curious little acrobat, the Chickadee, in winter are to be found. The White-breasted Nuthatch is a resident and may be seen at all seasons, and once nested on the premises, while the smaller and less noticable Red-bellied fellow from the north occasionally straggles to our premises in fall, winter or spring. We also have that delicate mite, the Brown Creeper, which appears each year irregularly from November to May.

The Robin is seen from February to December, and regularly for over eight months of the year. It nests in the yard almost every season, and is the favorite with all. One Wood Thrush has lent its presence, while the rufous tail of the Hermit was formerly seen in the row of raspberries in the garden, where it has been known to make its home for a week at a time in the spring. The Olive-backed Thrush also visits us occasionally. Our querulous friend, the Catbird, was well known as a yearly visitor before the shrubbery and garden were cleared away. A flaunting Brown Thrasher has been known to flirt his tail in the back yard, but this was years ago and before we had taken city airs. I have even seen a Wilson's Thrush in our yard, and have marvelled that it should thus vary its habit of almost constant seclusion. Our little friend, the well known Bluebird flies over or warbles agreeably, but no longer nests in the box provided for him.

It is only in later years, and since I have had the pleasure of reading the charming work by Gilbert White of Selborne, that I have thought to place these lists and observations in print. The notes on the birds, together with the lists of insects, mammals, indigenous plants, etc., would fill a small book in themselves. Let me say as an illus-

tration, that I have identified sixty-four species of moths and butterflies in the yard, while but one each of the *chelonina* and *ophidia*, have been taken, the snake and turtle, of course, being accidental stragglers.

Of the above list of birds I have found nineteen species nesting in the yard; most of which are only occasional nesters, a few of which were found nesting but in a single instance, while four may be called fairly regular as nesters.

MORRIS GIBBS, M. D.,
Kalamazoo, Mich.

Some Summer Birds of Androskoggin Lake.

In the month of June, 1898, it was my good fortune to spend a week on the shores of Androskoggin Lake and Dead River in the towns of Leeds and Wayne, Maine, in company with my naturalist friend, Mr. J. E. Teague, of Livermore, and to observe the nesting habits of many of our common birds. It is an ideal spot for the lover of nature, this large lake dotted over with its many islands, its waters splashing the shores and the birds flitting about; and to float across its waters and feel the summer's breeze blowing about you filled with the fragrance of wild flowers and then to paddle gently down the limous waters of the Dead River. This river is the paradise of birds. To the lover of nature this scene fills one with awe that our Creator could make things so beautiful.

We had a small camp back about twenty rods from the lake and when we arrived were met by the owner, Mr. D. P. Love, who had everything in readiness for our arrival. We at once made ourselves comfortable and after a lunch obtained a boat and rowed out to several of the islands. The following is a list of the species found breeding during our week's stay at the lake.

Loon, one nest with two eggs found

on a small island of mud at quite a distance from the mainland. Eggs very light, nest composed of water grass. Every night while lying in camp we could hear the wearying cries of the Loons out on the lake.

Spotted Sandpiper. No nests were found but young birds in the down were observed and old birds could be counted by the hundred.

Downy Woodpecker. One nest was found containing young in a white birch stub leaning out over the water of the lake.

Red-winged Blackbird. Nests were found containing eggs of this species built in low bushes in marshes back from the shore of the lake and many birds of this species were observed.

Baltimore Oriole. This species was breeding. Nests with eggs were found built in old apple trees near the shore of the lake from fifteen to thirty feet from the ground.

Vesper Sparrow. Several nests with eggs were found.

Song Sparrow. This species was the most abundant of any species of Sparrow found breeding at the lake. Many nests with eggs were found on Lathrop's Island, the largest island in the lake. I found a nest of this species at the water's edge built in a mass of dead water grass and driftwood and completely roofed over and concealed from view. It was found by flushing the bird from the nest that it contained four eggs, which was the usual number found in all of the nests we observed of this species.

Tree Swallow. One nest of this species was found near the mouth of Dead River back a few rods from the water. It was built in a maple stub nearly fifty feet from the ground. The stub was honeycombed with holes made by Woodpeckers, but only one pair of Swallows was seen. They were seen to fly to a hole near the top of the stub and were, as near as we could tell at

that distance from the ground, feeding their young,

Yellow Warbler. The most abundant breeder of any species found at the lake and river. Its nests were everywhere found, built in low bushes near the water at a height varying from two to fifteen feet from the ground; eggs commonly three and four in number. Mr. Teague found one nest containing five eggs on the banks of Dead River. Its nests could be counted by dozens while the birds could be seen by hundreds.

Oven Bird. One nest was found near our camp which contained five beautiful eggs. It was a typical nest of this species.

Maryland Yellowthroat. Two nests were found on islands in the lake built in low bushes. One contained three eggs the other four. No birds of this species were seen.

American Redstart. Several nests were found built in low maples and alders from 8 to 12 feet from the ground. Eggs three and four in number.

Catbird. Very common breeder; nests in low bushes; eggs three to four in number, commonly four.

Wilson's Thrush. Nests of this species were found on Lathrop Island and the banks of Dead River containing eggs and young. It was identified as this species by Mr. Teague and no other species of Thrush was seen at the lake. Nearly all of the nests contained four eggs each.

Following is a list of the birds seen at the lake and river but not found breeding:

Black Duck. A few seen, breeds quite abundantly in the latter part of June and in July.

American Bittern. Several birds of this species were seen.

Great Blue Heron. One or two seen near Lathrop's Island.

Ruffed Grouse. Several were seen near the lake shores.

Belted Kingfisher. This species was seen but very sparingly.

Kingbird. This species was very common on the banks of the river but no nests were obtained.

Pewees. Several pairs were observed.

Crested Flycatcher. Several birds of this species seen near the river.

Least Flycatcher. Birds of this species were seen near the river in a low growth of ash and maple.

Blue Jay. Not very plentiful, a few birds of this species were seen in coniferous growth near the camp.

American Crow. Very abundant everywhere.

Savanna Sparrow. Birds supposed to belong to this species were observed.

White-crowned Sparrow. Birds of this species were seen by Mr. Teague.

Chipping Sparrow. Abundant.

Barn and Bank Swallows. Abundant flying over the water of the lake.

Cedar Waxwing. Very abundant along the river banks.

Red-eyed Vireo. Quite plentiful in woods near the river.

Chestnut-sided warbler. Several birds seen both male and female.

Black-throated Green Warbler. A few pairs of this species were observed.

Chickadee. Very abundant.

American Robin. Very common near camp, also on the shores of the lake and river.

Bluebird. A few birds of this species were seen.

In concluding this paper, I know how very incomplete it is of the species found breeding and inhabiting this locality, but it is nevertheless a true record of species observed during our week's stay at beautiful Androscoggin Lake.

GUY H. BRIGGS,
Livermore, Maine.

Blue Jays at Play.

Reading Dr. Gibbs' interesting paper in the December number of the OÖLOGIST entitled "Performers and Singers," recalled to my mind a "performance" that I was a witness to many years ago.

Being in a newly settled part of the country, where the virgin forest was largely composed of pine, hemlock and cedar, a veritable paradise for Blue Jays, and they were there in great numbers enjoying it to the utmost of their capacity, and that is small for a bird of their size. Being seated on the brow of a high hill, in the shade of a wood behind me, looking down on a cleared flat, with a large elm tree with a wide spreading top standing alone in the centre; dead by girdling, but still retaining its ponderous branches; and having for a background a dense growth of cedar and hemlock a little distance away. Whilst surveying the situation around, above and below me, a noisy flock of perhaps twelve or fourteen Blue Jays came out of the wood behind me and made for the elm tree. They all dropped down upon the same branch, seemingly at the same time, which caused it to bend with their weight, to rebound again. This seemed to instantly suggest to the Blue Jays that they could have a teeter; so apparently with that end in view they all began to work in unison. Grasping the branch tightly with their toes they would throw their bodies up to raise the branch, then bring it down with force to send it lower; until they soon had the branch going up and down to such an extent, that on its descent some of them had to partially extend their wings to maintain their balance; whilst each seemed calling on its companions to urge them on to the utmost of their ability. At last the branch broke from their united efforts and sent the flock into the air, when they made for the cedars and hemlocks beyond, with the greatest amount of discordant noise I have ever heard from Blue Jays; which I can only compare with the screaming laughter of children over the success of some of their own pranks.

J. ALSTON MOFFAT,
London, Ont.

A later report states that B. F. Bowditch, of Porto Rico, who was reported dead in Jan. OÖLOGIST; is still living. Full particulars in March issue.

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VOL. XVII. NO. 8.

ALBION, N. Y., MARCH, 1900.

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THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND
TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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FRANK H. LATTIN,
Albion, Orleans Co., N. Y.

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Nesting Materials.

The materials that birds use for nest building are many and various; and we can almost say that everything is used in nest construction by some species of bird. Among the varied assortment we

shall find bones and stones, string and rags, hair and feathers, roots and bark, catkins and plant down, cast-off skins of insects, snakes and even small mammals' pelts, and hundreds of other articles too numerous to mention. These articles are selected by the birds in the construction of their nests, and are gathered from far and near. Then there are the materials which many species of birds supply from their own persons, as the down of the ducks' nests, and the glue of the chimney swift, which it secretes for the purpose.

It is an easy matter to study nest construction as followed in the spring of the year, but it is much easier to study the make-up of these nests in the autumn, winter or early spring when the leaves do not cover the trees, and furthermore we are not as liable to damage our little friends; as they have left their homes for the winter in the south, and will build anew when they return to us. As quite one-third of the birds of America nest on the ground or within a very few feet of it, it is not a difficult matter to study them in their nesting habits, and as well, secure the nests for inspection and the collection. There are many amateur collectors who are very considerate in regard to robbing the birds, and prefer to watch and study rather than take the eggs. Some of these students, and I wish there were more of them, gather the different kinds of nests after the nesting season is over and label them as naturalists do with specimens in their various departments.

Thoreau, that interesting out-door observer and graphic writer, was a pleased student of birds' nests in the winter, and in one of his diary entries in January we find this: "Another bright winter's day. To the woods to see what

birds' nests are made of." Let us go out with him and other observers and note what we can find.

Almost all of the larger birds which build in the tree tops, construct their homes of twigs and small limbs, and I have taken pieces all of three-quarters of an inch in diameter from a Red-tailed Hawk's nest, and have seen limbs fully four feet long in the nest of the Great Blue Heron. In these birds which select twigs and limbs, the largest birds use the heavier twigs and the smaller birds the smaller, as might be expected, and a student may often tell what sized bird is building in a tree by the twigs which fall from the structure. Very few of the larger birds devote any time to lining the big stick nests, and it is not uncommon to find hawk's and owl's nests without a particle of any material of a lining nature, the eggs being laid on the platform of rubbish. The Great Horned Owl frequently disposes a few feathers about the coarse nest which it has appropriated from the Red-tailed Hawk, as it rarely builds a nest for itself, preferring to take an old nest of the hawk, or quite as likely occupying a hollow. Nearly all of the hawks line their stick nests with small flakes of bark, moss, or some grass at times. Some, as the Cooper's Hawk, at times line the nest nicely with fine roots, after the manner of the Bluejay and Catbird. One owl, the Long-eared, warmly lines the structure it has stolen from the crow with feathers, and I think this bird has the warmest nest for its eggs of any of the rapacious birds of my acquaintance.

The wild pigeon builds a very poor excuse for a nest, as it is a mere platform composed of a few slender twigs, and is so loosely put together that the single egg may be seen through the bottom, and I have never found it lined in the pigeon rookeries that I have visited. Pigeon's nests are so poorly constructed that they are quickly blown from their locations, but many kinds of

stick nests last for years, and I know of old deserted hawk's nests which have retained their positions in the big crotches for twelve years or more, and the remains of the old nests of a colony of Herons are still to be seen after over twenty years of wear and tear of the storms. Many of the smaller birds build frail structures, as the Rose-breasted Grosbeak and Scarlet Tanager, which birds are so shiftless at times that the eggs may be seen through the bottoms of the nests, the roots, weeds and grass sometimes barely holding the eggs, yet again the birds build well hollowed and well padded nests.

The little Yellow Warbler selects fine strippings from weed stalks of a hempen nature, and the nest has the light appearance of the Baltimore Oriole's home, and this light color often leads to its discovery when search is made for it. There are many other nests of the Warblers which resemble this one, being composed of similar materials, while the Goldfinch and Least Flycatcher build of nearly the same timber. Still there is enough of difference in the nests, as to form, size and make-up so that an observer can tell the owners from the nest as well as by the eggs in it. Many true students of bird habits can tell the name of the bird owner by the nest, even if it is not at home, and rarely make a mistake, and this class of observers is to be admired far more than the collectors who almost always shoot the parent bird to prove identity. It were far better to remain in ignorance of the identification of birds and nests than to destroy the beautiful birds about us. Years ago when I was a lad studying the creatures of the forest and field and works on ornithology were unknown to me, the names of nearly all of my feathered friends were of my own coinage, and at this time I cannot help but think that it was a greater pleasure to know these friends by sight than it is to now know them by their scientific

names and arbitrary classification. But after becoming familiar with these busy creatures fair, by sight, sound, home and habits, there is the added pleasure of teaching others to know and appreciate them.

In my collection of nests are delicate structures made by the Blue-gray Gnatcatcher. Fairy-like homes which seem scarce strong enough to withstand the weather for a season, yet one which I collected over twenty years ago, and which weighs less than a half ounce, has by care kept its form and delicate external lining. This magical creation, which I took from a horizontal limb of an oak at an elevation of twenty-two feet from the ground, is, or was, slightly over two and a half inches in height, and about the same in diameter, externally, while within it was nearly two inches deep and about one and three-quarters across the hollow. In composition it was mainly of minute weed-stalks and strippings of bark, so delicate that the three hundred pieces weigh less than thirty grains. These strippings which give stability to the nest are some of them over two inches in length. They were all placed in the form of a circle and in no instance vertical. These strippings mixed or blended with a few tufts of moss, still green, after all these years, small pericarps, delicate spider's nests and a few very small leaves; the latter mainly in the formation of the base. All through the structure are small bits of lichens, and this material forms the bulk of the neat home as besides being incorporated in the body of the nest it is the entire external lining. Over two thousand separate bits of lichens are used in this one nest; all being held to the sides of the home, or in the body of it by spider web and downy material from the flowering catkins. In this nest were over three thousand separate pieces of materials, all of which were brought piece meal to the limb from surrounding trees or

at quite a distance from the site. It is no wonder that the pair of Gnatcatchers was occupied a full week in constructing this nest. There are three other species of birds which ornament their nests habitually with bits of lichens. They are the Yellow-throated Vireo, Wood Pewee and the delicate Hummingbird, known as the Ruby-throat. The external lining of the Vireo's nest is not so neatly put on as in the case of the Gnatcatcher, but the work of the Hummer is beyond compare, the little cup of a nest being perfection in all its parts.

Birds have their preferences in nesting materials, and will go far from the site of the nest at times to secure the proper materials. We may go further and say that many species have specialties, and in most cases maintain their peculiar demands for certain timber for their homes. The Marsh Wrens and Orchard Orioles weave their entire structures of grass, the Wrens using green grass usually and attaching to the green grass of the marsh which gives the support, while the orchard musician invariably uses green grass, and this material gives the nest a protective coloration which is very successful. Many other birds use dry grass, the list being too long to present, but these are given as specialists.

Robins use mud in the construction of their homes and I have yet to see a nest of these well-known birds which was not largely composed of mud mixed with other materials. Many other species use mud in their nests, but the Eave Swallow is perhaps the most exclusive in the use of this material, as the entire structure of the Republican Swallow, as it is also called, is of mud with a few hairs to hold the mortar in place, and often these hairs are almost or entirely absent. The nests of the Eave or Cliff Swallow are made by the additions of little pellets of mud, which partakes of the nature of mortar and after becom-

ing dry is hard and very stable.

The Belted Kingfisher has a nest entirely of sand, for the burrow in the sand bank has no lining and the eggs are laid on the bare earth. The nest of the Loon and Grebe is composed of garbage from the lake, and often a variety is embraced in the soggy structure. Many Ducks build no nest at all, or very shiftless ones at best, but all, or nearly all beautifully line their nests with down plucked from their own breasts. Woodpeckers, though digging out their homes at great pains, rarely or never line them, and all the nests that I have examined were provided alone with a few chippings of wood. Herons compose their nests almost entirely of sticks and twigs, but some species make use of roots and moss, and sometimes the Green Heron uses grass, while the small and greater Bitterns construct their nests entirely of grass and rushes. The former usually making a platform a few inches to three feet above the water or marsh and the latter selecting some bog or slight elevation in the marsh. The Cranes make scanty nests, and generally select a pile of rubbish or a lot of marsh hay placed to their liking.

To be continued.

MORRIS GIBBS, M. D.

Kalamazoo, Mich.

Scaled Partridge.

Perhaps a few notes on the *Callipepla squamata*, Scaled Partridge (A. O. U. No. 293) as it is seen in its natural haunts will interest some of the eastern readers of the OÖLOGIST who are not acquainted with this bird in life.

Although Prof. W. W. Cooke in his "Birds of Colorado" lists this bird as a rare or accidental visitant to Colorado, it occurs in considerable numbers in the valley of Rocky Ford and in flocks of from twenty to one hundred in the foot hills forty miles to our south. Prof.

Cooke got his information from W. P. Lowe of Pueblo who perhaps never collected as far south-east as this, and perhaps missed the species and therefore caused the mistake. As this species has been but little studied I have given it extra time. Upon several occasions while collecting skins I have sat upon a rock and watched the birds as they wandered about seeking their food.

In habits the *Callipepla squamata* resembles the *Colinus virginianus* (Bob-White,) it goes about in flocks until the mating season which commences about April 1st here, but as this is the northern limit, it probably mates in March in the warmer latitudes. It is a non-migrator and there has been a flock of sixteen coming regularly every day to the barn on my ranch to get their breakfast. I have fed them when the mercury stood at 20° below zero. They get very tame when treated kindly. Although they are a Southern species they stand the winters here as well as the *Colinus virginianus* or *Callipepla californica* which are both residents of Colorado. These in the valley visit the ranchmen's feed lots and fare better than those in the hills who have to baffle deeper snow with only what food they can get above the snow. Their food consists of wild sun-flower seeds, cedar berries and seeds of two or three other plants of which I do not know the names.

At the nesting season the male will sit on some elevated object or point and call out his two notes of *chug ch-u-g* which is nearly a whistle, (or a whistle with a grating sound) and is easily imitated by the human voice. These two notes are repeated from four to ten times, according to the bird's wishes, and are made nearly together, it taking the bird about one second to make both notes. The accent falls on the end of the last note. The key is about the same pitch as the first note of the Bob-White.

The nests are made in some depression in the Rocks, where the birds inhabit the hills, generally under a small cedar, cactus or other natural protection, with a few cedar needles or dirt for the eggs to rest upon and a few feathers from the old bird's breast as a lining, but the feathers are very scarce, sometimes lacking altogether. In the valley they nest under a sage brush, cactus or some other bush and have a nice dry nest of leaves and small sticks, although built with no system as in the case with so many birds. They lay from eight to fourteen eggs of a dirty cream color with specks of brown of different sizes.

A. R. BEYMER.

Rocky Ford, Colo.

Winter Notes.

There are but few points to be observed from my study window in the winter months; still there is more of interest than would be at first supposed. There have been over a dozen species observed, while the plant life is worth studying. For instance, there is a little garden bed under my window which was carefully made over on the 28th, of last October, yet from this bed has sprung a mass of chick weed that has blossomed off and on for over a month and at this date, February 9th, 1900, is covered with buds, although covered with snow. The snow has come and gone four times this winter, and twice we have had zero weather, yet, although the weather was below zero on the first of this month still the little chickweed showed a great mass of buds under the snow.

Among the birds the Blue Jay is the most regular in appearance and hardly a day passes that these droll fellows are not seen and heard near our house. The Jay is the most ubiquitous of all the birds in this country. Not far from our house and in plain sight from my window are two large oaks and in each

tree is a nest. These nests undoubtedly belong to the same pair of birds and they have probably been occupied by them at various times, and the devoted pair shows considerable interest even in winter. As my seat faces the oaks I can see all that is going on in the trees and and may keep watch of my friends with very little loss of time.

The Jays are to be seen almost every day and when the weather is not too severe and often when the temperature is down as low as ten degrees above zero; and they may be heard shrieking defiance at old Boreas when the snow is flying and the windows rattling.

This particular pair of Jays frequently visits the oaks where the nests are built, and four times during the space from November to early February I have seen the birds visit the nests and hop into the cup and sit there as if it were spring, and remain in that position for a full minute. Then the pair would hop about the site as if in memory of the past season, or more probably in anticipation of the coming season. It is very unusual for birds to occupy nests in the winter season, and I know of no other instance where this occupancy has been observed in the case of those birds which build open nests after the manner of the Jays. There are some species which build and lay their eggs in February and early March, as the Great Horned Owl, but it is not generally known that any of the common smaller birds thus occupy their summer homes.

MORRIS GIBBS, Kalamazoo, Mich.

Mockingbird in California.

I read the account of A. A. Jeffrey in the December OöLOGIST and find that the habits and nesting of the Mockingbird *Mimus polyglottos* differs very much in California from those described in the article of Mr. Jeffrey.

Here the Mockingbird remains

throughout the year. There were none seen here until about 1896. Then there appeared one pair in town. They nested and now the county is full at them.

It is noticeable that they stay very close to inhabited dwellings. They nest in April the first time and rear several broods in a season. The nest is built up of small weed sticks and lined with hair, cotton or wool. It measures some 5 to 6 inches across and is usually 2 inches deep. It is placed invariably near some habitation, sometimes in a pile of brush, sometimes in a dead tree, while again it may be found in a dense undergrowth or hedge.

When you approach the nest the male sits quietly by and watches. When within a few feet of the nest the female generally slides off the nest and retreats a few yards and perches. There she sits uttering a sort of rasping call while the nest is investigated; They never make any fuss until the nest is reached.

I have never taken a set, where incubation has commenced, of less than four eggs and usually five or six. The eggs vary greatly in size, shape and color. Some are almost round while others are long and pointed. There are bluish green spotted with reddish brown. Often they are spotted profusely but sometimes a set is found with few spots on the larger end.

The birds feed upon fruits, worms and insects. I have noticed them rob a nest of Warblers and eat the eggs. They also fight other birds.

The male does most of the singing. He perches on a housetop, fencepost or other convenient place and pours forth his song in clear distinct tones. He can imitate any sound he hears, domestic or wild. The bird may be heard singing in the night and I have heard them singing as late as midnight and 2 a. m. Their song is very pleasing and consists of very short imitations of all other birds, only a few notes of each

one's song being represented.

I should like to hear from the Mocker from other places in the U. S. This locality is 36"; or almost as far north as he goes.

R. LEE,
Tulare, Calif.

A Robin Tragedy.

Early one morning in April, 1897, while strolling along the street enjoying the exhilarating jubilant song of the Purple Finches, the activity of Bronzed Grackles flying back and forth over the tree tops with nest building material to various evergreen trees, and listening to the morning chorus of dozens of Robins, I found a Robin hanging about one foot below its nest. The nest was about ten feet up in an evergreen tree and near the end of the limb.

Upon examination I found that they had used a quantity of white thread ravelings as a finishing touch around the rim of the nest and that several of these had become entangled in the joint of the Robin's tongue, so when in the act of flying from the nest it was suddenly brought to a stop and jerked below the nest where the poor bird hung by its tongue, dying a sad and painful death. I took the Robin with the nest and one egg. A few days later I had occasion to pass under the same tree and happening to look up I was rather surprised to see a Robin sitting on her nest which had been placed in the same spot as the first nest and she had even used some of the fatal ravelings in its structure, but this time no fatality occurred and in due time a family of Robins was added to the bird world.

C. F. STONE,
Branchport, N. Y.

Suggestions.

The army of enthusiastic young

workers in the field of Oölogy is steadily on the increase and while we extend a hearty welcome to new adherents we are still inclined to disapprove of all attempts to better establish method. For the benefit of advanced students, who have not participated in the joys of the exchange column, I will make so bold as to volunteer a few suggestions in accordance to my experience.

Eggs should be collected in sets. A set is the number of eggs found in any one nest when the bird has ceased laying or may be a selection from a "job lot" varying in number to suit purchaser or the second party in an exchange transaction. Was once offered a set of 14 eggs of the Catbird accompanied with the assurance of its being an unusual number. In reply I heartily agreed with the collector that such large sets of that species were very unusual and while I highly appreciated his generosity in offering to part with so great a rarity, I could not find it in my heart to take advantage of such noble sacrifice by accepting.

If you are an eastern collector prefix the word western to sets of the Bluebird and Robin you collect. This enables you to gladden the heart of some eastern Oölogist by affording him the opportunity to secure the rarer western varieties. Have known this to occur and why it should be done is, of course, an insoluble mystery when we reflect that the eastern variety is of much less value. Have also known of a set of Red-headed Woodpecker to be sent to California as such and later returned east as the California species.

Identification is of vital importance and should be influenced by the value of different species, when possible. For illustration we will assume that a set is found in a bush by the roadside and bears every indication of being that of Yellow Warbler but the eggs differ somewhat from the general run. You consult some work on birds and discov-

er they fit description of Golden-winged Warbler and label them accordingly. Now, as you wish to dispose of them and spare a fellow collector the pain of suspicion, you simply shift location of nest on data to clump of ferns in woods and again referring to the book can easily ascertain its composition.

Blow your eggs through as large a hole as possible, especially if fresh. This enables you to feel inside with your finger and make sure the contents has been thoroughly removed.

In packing eggs for transportation line a box with cotton and dump them in. Do not forget the lining of cotton as otherwise the eggs will bump against the box and injure it. It is not advisable to carefully wrap each egg in a generous strip of cotton owing to the grave danger of shipment reaching destination without accident.

J. CLAIRE WOOD, Detroit, Mich.

Nesting Habits on the Black-throated Green Warbler.

The Warbler is quite common in this locality and arrives here the last of April and the first week in May. Its favorite resorts and nesting places are thick spruce and pine forests on the slope of a hill. The nest is usually placed on a fork of a coniferous tree generally a spruce or pine with thick foliage and well out on a limb within a few feet of the tip usually at no great height. My note book says from 6 to 20 ft. from the ground ten or twelve being height, in 1898 I had the good luck to find three nests with eggs of this Warbler May 26 No. 1, 5 fresh eggs, nest placed on a horizontal limb of a pine tree near an old wood road, nest made of pine twigs, strips of bark and grass, lined with hair and feathers covered on the outside with birch bark making it very conspicuous against the green foliage of the tree. May 28 No 2

4 eggs incubated about $\frac{1}{2}$. Nest placed on a fork of a horizontal limb of a spruce tree 20 ft. from the ground and well out on the limb, nest made of spruce twigs, strips of bark and grass lined with hair and feathers, this nest somewhat larger than the first. May 31, No 3, nest placed on a horizontal limb of a spruce tree, 11 ft. up and near the tip of the branch, nest made of spruce twigs, weed stems, strips of bark and grass lined with hair and feathers and contained 4 fresh eggs

They migrate from here from the 1st to the 15th of Oct. I visited their breeding grounds after the breeding season in July and was surprised to not see any birds. Where they disappeared to I am at a loss to know.

A. H. MILLS, W. Rutland, Vermont.

Bird Notes from Maine.

Birds have been quite abundant here this winter, I have observed the following species:

Ruffed Grouse: that beautiful and valuable game bird is very abundant here; nearly every coniferous growth is a roosting place for several of these birds.

Downy Woodpecker: nearly every hard wood growth contains a pair of those interesting birds.

Blue Jay: more abundant near my home than for several winters past.

Amer. Goldfinch: have observed several quite large flocks of this species this winter.

Pine Grosbeak: this species has been very abundant; several pairs of these birds have been in our orchard trees nearly every day and are very tame.

White-breasted Nuthatch: Very abundant, several pairs have been observed in trees in our yard nearly every day this winter.

Chickadee: this interesting little bird is an abundant resident throughout the year.

White-winged Crossbills, Redpolls,

Pine Siskin and Song Sparrow have been seen in different parts of the state but have not observed any in this locality.

GUY H. BRIGGS, Livermore, Maine.

A Saw-whet Owl.

On Feb. 10, while I was walking through a small patch of bushy woods, with a few white pine and cedar trees distributed over it, I found a Saw-whet Owl asleep in a white pine tree, which I was much surprised to see.

As I was without a gun I could not shoot him and so I chased him all around among the evergreen trees. He was very tame and would not move until I threw something at him and when flying he went in circles, and he had a very wide wing expanse.

In the afternoon when I came back I found him still there and I shot him and had him mounted.

J. STANLEY HOWARD,
West Medford, Mass.

A Un usual Nesting Site.

In July 1898 I found a nest of the Chimney Swift built on a perpendicular wall inside a carriage house, the birds going to and fro through a small hole in the side of the building. The nest was made of the usual material and contained four fresh eggs.

GUY H. BRIGGS, Livermore, Maine.

Errata.

Feb. No. to hand. I see there are two greivous errors in my note "Blue Jays at Play." "That is small for, etc.," should have been "That is not small etc." Whilst "ponderous branches" should have been "pendulous."

J Alston Moffat,
London, Ont.

\$2.75 for \$1.

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imens, &c. mentioned in this Premium List to the amount of \$2.00 and THE OÖLOGIST one year including a card good for one Want, Exchange or For Sale Notice. Make a combination with a friend—you take the premiums, he THE OÖLOGIST or vice versa. Subscribers desiring to purchase additional premiums can do so in lots netting 50c or over at one-half prices quoted.

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FRANK H. LATTIN, Publisher, ALBION, N. Y.

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|-------------------------------|------|
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| Skuia..... | 75 |
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| Snowy Heron..... | 15 |
| Louisiana Heron..... | 15 |
| Little Blue Heron..... | 15 |
| American Coot..... | 10 |
| Curlew..... | 75 |
| Kingbird..... | 05 |
| Purple Grackle..... | 05 |
| Florida Grackle..... | 15 |
| Brewer's Blackbird..... | 05 |
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| Green Heron..... | 15 |
| Bl'k-crowned Night Heron..... | 15 |
| Red-necked Phalarope..... | 75 |
| Whimbrel..... | 50 |
| Lapwing..... | 20 |
| Killdeer..... | 20 |
| Bob-white..... | 10 |
| Ring Pheasant..... | 35 |
| Mourning Dove..... | 05 |
| Burrowing Owl..... | 20 |
| Florida Burrowing Owl..... | 1 25 |
| Road-runner..... | 25 |
| Golden-fr'ed Woodpecker..... | 50 |
| Cassin's Kingbird..... | 25 |
| Mexican Horned Lark..... | 75 |
| American Crow..... | 10 |
| Fish Crow..... | 35 |
| Starling..... | 10 |
| Red-winged Blackbird..... | 05 |
| Tri-colored Blackbird..... | 15 |
| Orchard Oriole..... | 05 |
| Boat-tailed Grackle..... | 15 |
| House Finch..... | 05 |
| Gray-tailed Cardinal..... | 35 |
| Painted Bunting..... | 10 |
| Yellow-breasted Chat..... | 10 |
| Bewick's Wren..... | 25 |
| Mockingbird..... | 05 |
| Brown Thrasher..... | 05 |
| Red-leg Turtle..... | 10 |
| Moorhen..... | 15 |
| Mute Swan..... | 2 00 |
| European House Sparrow..... | 05 |
| European Tree Sparrow..... | 15 |
| European Blackbird..... | 05 |
| European Redstart..... | 05 |
| European Robin..... | 10 |
| Jackdaw..... | 15 |
| Rook..... | 15 |
| White-throat..... | 05 |
| Chaffinch..... | 05 |

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|---------------------|----|
| Greenfinch..... | 05 |
| Yellow Bunting..... | 05 |
| Hedge Sparrow..... | 10 |
| Song Thrush..... | 05 |
| Sand Martin..... | 05 |
| Willow Warbler..... | 10 |

Sets.

| | |
|--------------------------------|----|
| Gannet, 1-1..... | 50 |
| Green Heron' 1-4..... | 63 |
| Bl'k-crow'dNight Heron1-3..... | 40 |
| Bell's Vireo 1-4..... | 60 |
| Yellow-breasted Chat 1-4..... | 40 |
| Brown Thrasher, 1-4..... | 50 |
| American Crow, 1-5..... | 50 |
| Lapwing, 1-4..... | 75 |
| Painted Bunting, n-5..... | 75 |
| Mourning Dove 1-2..... | 45 |
| Boat-tailed Grackle 1-3..... | 45 |
| Red-winged Blackbird 1-4..... | 60 |
| Tri-colored Blackbird 1-4..... | 30 |
| Orchard Oriole 1-5..... | 25 |
| European Blackbird, 1-4..... | 25 |
| Yellow Bunting, 1-3..... | 20 |
| Chaffinch, 1-5..... | 30 |
| Greenfinch, 1-5..... | 30 |
| Redstart, 1-5..... | 25 |
| Song Thrush, 1-4..... | 25 |
| White-throat, 1-5..... | 30 |

SEA SHELLS.

| | |
|---|-------|
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| <i>Helix Zebuensis</i> , Philip'nes..... | 25 |
| <i>Helix fideles</i> , Oregon..... | 25 |
| Quoit Shell (1/2)..... | 05 |
| Maggie, Bahamas..... | 15 35 |
| Many-lined Bulimulus..... | 05 |
| E. I. Clam (1/2)..... | 15 |
| <i>Neritina reclinata</i> , Fla..... | 5 10 |
| Stair Case <i>Cerithidea</i> , Fla..... | 10 |
| Angel Wing (1/2)..... | 10 |
| <i>Bulimulus Bahamaensis</i> | 10 |
| <i>Scarabus pyramidatus</i> , Gm..... | 10 |
| <i>Achatinella olivacea</i> , Haw'ii..... | 10 |
| " <i>spirizona</i> , Hawaii..... | 10 |
| " <i>uniplicata</i> , Ha'ail..... | 10 |
| Calf Cowry, Australia..... | 10 25 |
| Gnawed Cowry, Australia..... | 5 10 |
| Cauri Cowry, Australia..... | 5 10 |
| Crown Shell, Gulf Mex..... | 15 |
| Filletted Shell, Gulf Mex..... | 15 |
| Spiral Shell, Hayti..... | 10 |
| Rock Murex, Fla..... | 25 |
| Thorny-nosed Murex..... | 10 25 |
| Pink Murex, L. Calif..... | 75 |
| Black Murex, Panama..... | 25 75 |
| White Murex, Zanzibar..... | 25 |
| Scorched Murex, Bahamas..... | 10 |
| Leaf-back " Med. Sea..... | 15 25 |
| Japanese Eburna..... | 25 |
| Fish Basket, Japan 2 for..... | 05 |
| Foxhead, Singapore..... | 35 |

| | |
|--|-----------|
| Giant Fasciolaria, <i>young</i> | 10 |
| Lettered Olive, Fla..... | 5, 10, 25 |
| Inflated Olive, Singapore..... | 5, 10, 25 |
| Spider Web Olive, Cal..... | 5, 10, 25 |
| Ice Shells, Fla. Keys, 12 for..... | 05 |
| Harp Shell, Ceylon..... | 50 |
| Dove Shell, Jamaica 3 for..... | 05 |
| Thunder Storm Shell 2 for..... | 05 |
| Lettered Cone, Ceylon..... | 35; 75 |
| Marbled Cone, Polynesia..... | 50 |
| Virgin Cone, Mauritius..... | 35, 75 |
| Miles' Soldier, Ceylon..... | 50 |
| Fighting Shell, Gulf Mex..... | 25 |
| Orange Scorpion, Poly..... | 25 |
| Violet-mouth " Molucas..... | 1 00 |
| Pelican's Foot, Med. Sea..... | 05 |
| Ringed Cowry, Singapore..... | 05, 10 |
| Snake-head Cowry Aus..... | 05, 10 |
| Money Cowry Ceylon..... | 05, 10 |
| Mole Cowry, Zanzibar..... | 25, 50 |
| Tiger Cowry, Australia..... | 35 |
| Rye Shell, Bahamas..... | 05 |
| Poached Egg, Fiji..... | 25 |
| Hump-backed Egg, W. I..... | 10 |
| Porcelain Rump Shell, Bah..... | 05 |
| Paper Shell, Fla..... | 25 |
| Boat Shell, Mass..... | 05, 10 |
| Screw Shell, Calif..... | 10, 25 |
| Yellow Pea, England, 2 for..... | 05 |
| Brown Snail, Mauritius..... | 05 |
| Tower Shell, Cuba, 2 for..... | 05 |
| Bloody Tooth, W. I..... | 05, 10 |
| White Tooth, Tortugas..... | 05, 10 |
| Zebra Shell, Nassau, 6 for..... | 05 |
| Wheel Shell, Japan, 2 for..... | 05 |
| Goldmouth, Philippines..... | 15, 35 |
| Venetian Snail, Med., 6 for..... | 05 |
| Black Ear, Calif..... | 35 |
| Keyhole Limpet, Bah..... | 05 |
| Band'd Tree Snail, Cuba..... | 5, 15, 25 |
| Black-mouth " 5, 10, 15, 25, 35, 50..... | |
| Hunch-back Partula..... | 05 |
| Little Agate Shell, Hawaii..... | 10 |
| Pea Nut Shell, Cuba, 3 for..... | 05 |
| Banded Melampus 3 for..... | 05 |
| Mermaid Cradle, Pacific..... | 25 |
| Sun Shell (pair), W. I..... | 15 |
| Pacific Scallop (1/2) Calif..... | 15 |
| Jewel Shell (1/2) Australia..... | 10 |
| Jingle Shell, Mass., 2 for..... | 05 |
| Venus Shell, Calif..... | 25 |
| Thorney Chama, Bahamas..... | 15 |

SEA CURIOS.

| | |
|-------------------------------|------------|
| Tail of King Crab..... | 5, 15, 25 |
| Brown Scaley Gorgonia..... | |
| Bahamas..... | 15, 35 |
| Finger Coral, Hayti..... | 15 |
| Pink Coral, Samoa..... | 10, 25, 35 |
| Spike Coral, Bahamas..... | 10, 25 |
| Mushroom Coral, Gulf Cal..... | 25 |
| Propeller Coral, Bahamas..... | 25 |
| Branch Coral, E. I..... | 5, 10, 15 |
| Organpipe " Singapore..... | 10, 25 |
| Precious Coral, Med. Sea..... | 25 |

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| Golden Sea Fan, Pacific..... | 75 | <i>Anchocrinus bulbosus</i> , Ind..... | 25, 50 | Opals..... | 15, 25, 05 | |
| Yellow Sea Fan, Nassau..... | 25, 50 | <i>Atrypa reticularis</i> , Ind..... | 25 | Red Onyx..... | 10 | |
| Purple Sea Fern, Key West..... | 75 | <i>Athyris vitata</i> , Ikd..... | 05 | Black Onyx..... | 10 | |
| Armor Starfish, Panama..... | 50 | <i>Scaphites nodosus</i> , Montana..... | 10, 25, 50, 1.00 | Crocidolite (Tiger Eye)..... | 10, 25 | |
| Compass Starfish, Chili..... | 25, 50 | MINERALS | | | Lapis Lazuli..... | 15, 25 |
| Golden Starfish, Pacific..... | 50, 1.00 | Zircon Xtals..... | 35 | Chalcedony..... | 10, 25 | |
| Club-spined Urchin Bah..... | 25 | Ferruginous Quartz, dibly..... | 35 | Tinted Chalcedony..... | 15 | |
| Giant Purple do, Pac..... | 50, 1.00 | term Xtals..... | 35 | Tree Chalcedony..... | 10, 25 | |
| Spined Pur. Urchin, G. Mex..... | 25 | Halite Xtals, faceted cubo- octohedron..... | 75 | Red Ribbon Agate..... | 5, 10, 25 | |
| “denuded”..... | 25 | Hanksite, button Xtals..... | 25, 75 | Black Ribbon Agate..... | 5, 10, 25 | |
| Key-hole Urchin, G. Mex..... | 25 | Thenardite Xtals..... | 25, 35 | Moss Agate..... | 10, 25 | |
| Philippian Urchin, Phil..... | 15, 25 | “crosses”..... | 50 | Wood Agate..... | 15 | |
| Egg Case Periwinkle..... | 15, 25 | Barite Xtals, Bad Lands..... | 35 | Fossil Coral..... | 10, 25 | |
| Acorn Barnacles, Pacific..... | 15, 25 | Tourmaline Xtals, N. Y..... | 25, 50 | Bloodstone..... | 15, 25 | |
| Sea Horse, Med. Sea..... | 50 | Satin Spar, England..... | 10, 25 | Succinite (Amber) Baltic..... | 25 | |
| Sea Horse, Pac..... | 50 | Calcite Xtals, England..... | 25, 50 | MISCELLANEOUS. | | |
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| Luck Tooth of Cod, Atlan..... | 05 | Dog-tooth Spar, N. Y..... | 25 | Nest of Painted Bunting..... | 35 | |
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| Tarpon Scales, 2 for..... | 05 | Chialstolite Crystal, Calif..... | 10 | Brown banded Sea Bean..... | 05 | |
| FOSSILS. | | | | | | |
| Diatomaceous Earth, rich in <i>Polycystina</i> , Barbadoes, 1 dcm..... | 25 | “Electric” Stone, N. Y..... | 25 | Red Sea Beans, W. I., 2 for | 05 | |
| Baculites, section, Dak..... | 50 | Coquina, Fla..... | 10, 25 | Big Tree Bark, Cal..... | 25 | |
| Crinoid Stem, Ind..... | 25 | Chalcedony Geode, Dak..... | 35 | Gun Flint, Revolutionary..... | 25 | |
| Belemnites, section, N. J..... | 10 | Green Fluorspar, N. Y..... | 10, 25 | Resurrection Plant, Mex..... | 15 | |
| <i>Rhynchonella capax</i> , Ind..... | 05 | Native Lodestone, Ark..... | 10, 25 | Tapa Cloth (bark) Samoa..... | 10 | |
| Polyp Coral, N. Y..... | 10, 25 | Mexican Onyx..... | 10, 25 | Clay Police Whistle, Mex..... | 10 | |
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VOL. XVII. NO. 4.

ALBION, N. Y., APRIL, 1900.

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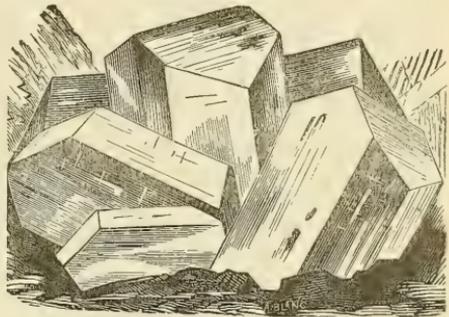
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BIRD-LORE

For February, the first number of Volume II, contains a full-page portrait of the late Elliott Coues, a list of over 50 prominent ornithologists, residing throughout the United States and Canada who have consented to aid bird students by responding to their requests for information and advice, and, among others, the following articles: "Concerning Birds' Tongues," (12 illustrations) by F. A. Lucas; "The Economic Value of Gulls," (illustrated) by Frank M. Chapman; "Bird Study at Oberlin College," by Lynds Jones; "Every-day Study of Birds for Busy People, including a method of Recording Notes," by W. H. C. Pyncheon; "The Season's Flight of Crossbills," (illustrated) from notes by William Brewster, J. N. Clark, and others; "The Blue-winged Warbler in Southern New York in January," by Elizabeth G. Britton; "Where the Grebes' Breasts Come from," by Vernon Bailey.

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THE OÖLOGIST.

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OÖLOGY, ORNITHOLOGY AND
TAXIDERM Y.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

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Nesting Materials.

Continued from last month.

The Snipes and Sandpipers make shiftless nests and often make no preparations for their eggs beyond the selection of a slight depression in the

field or marsh. The Plovers are still more negligent, and rarely make any preparation beyond the arrangement of a few little gravel stones about the prospective place of deposition, or perhaps a few scratches in or about a slight hollow. But in the case of these gravel stones, the watchful birds are quite jealous, and will often rearrange the misplaced ornaments if disarranged by the interlopers. The same habit has been noticed in the case of the Nighthawks who often build among gravel and who undoubtedly select these situations for the protective appearance of the surroundings. The speckled eggs of both the Nighthawk as well as those of the Plovers and Sandpipers, make it exceedingly difficult to discover the location. Where the Snipes and Sandpipers build nests the structures are poorly made of grass and roots, and at times a few twigs. In those birds which carefully tend their young in the nest for a period of from ten days to nearly three weeks as is the case with nearly all of the perching birds, it is essential that the nest should be quite durable. But with the precocious birds, as the Grouse and Quail, Snipe and Plovers it is not necessary to have a stable nest, as the young can and do run about the next day after they emerge from the shells. As these birds never remain in the nest or place where hatched more than a day or two, but wander about, and often to quite a distance following the old bird, it would be a useless waste of time to construct a strong nest. That the birds reason this out I have not a doubt, and as an instance in point would cite the observations that we made on an island in the Indian river, Florida, where a large rookery of Pelicans was quartered. Many nests

were built in the mangrove trees while much the larger number were found upon the sand at a very few inches elevation above the tide. Now while the nests on the ground were mainly constructed of coarse grass and rushes, resembling straw, and were poorly built, the nests in the trees were found to be well built, being mainly constructed of heavy sticks to withstand the wear and tear of time and storm. If this is not an instance of reasoning in birds then there is no such a qualification in animal life in any of its many and varied degrees.

The Cuckoos construct poor nests; in many instances mere platforms of twigs much like the nest of the Passenger Pigeon, but usually provided with some lining, often the blossoms of the beech or willow. On this nearly level top are laid the eggs which are on the verge of ruin most of the time when the old bird is away.

The Whippoorwill is another peculiar nester who lays its eggs on the bare dry leaves, and without a sign of preparation. It is quite possible, yes and even probable (for Audubon says it is so) that the Whippoorwill removes its eggs from place to place when necessary. I have seen an instance in the case of the nearly allied Nighthawk where the eggs were removed by some means, and I believe through the bird's agency. If this power exists, why should the birds build a nest?

Among the specialists in choice, the Black-capped Chickadee is a remarkable instance of selection of the fur and hair of animals. This energetic little fellow will look up some small dead mammal and pick off the delicate fur for its nest in the hole in the stump. Perfectly clean fur is chosen, and the result is a very soft, warm nest in the cavity. The fur, which is almost invariably mixed with dried mosses, shreds of which are still green, and also downy substances from catkins containing reddish bunch-

es; all making a very pleasing combination. On this bed in the cavity are laid the six to eight delicate white eggs spotted with reddish. I have met with but one nest unprovided with fur, and this occurred in the village where the little Titmouse had taken up its unusual spring abode. Rabbits or mouse's fur is generally selected, but there are nearly a dozen small mammals to select from, and I have seen the long hairs from the coon and woodchuck appropriated by these little birds. Nothing lacking in the artistic, or wanting in comfort is ever chosen by these little inhabitants of cavities. It is a pleasure to watch the nesting habits of the Titmouse from the first peck in the decayed stump to the time that the young leave their cavity home and follow their lively parents about the grove.

Another cavity nest builder, and one belonging to the same family, is the White-breasted Nuthatch. This little up-side-down bird as I call it, in allusion to a common position in movements, selects a cavity ready made when opportunity offers, but can dig out a burrow in the decayed wood if necessary. It follows that holes are selected of all sizes, and these cavities are filled after the manner of the imported Sparrow with all kinds of rubbish. There was one nest that I examined which was placed in a space between the lath and siding of a house in the village, and which was reached by a knot-hole. At least a peck of rubbish was taken through this hole to fill the cavity, and the mass comprised most everything that could be found in a door yard excepting tin cans and stones. The only other native birds which I have found to fill large cavities in this manner are the House Wren and that curious nest builder the Great Crested Flycatcher.

Among the Warblers we meet with some curious and artistic designs in nest construction. The nest of the Yellow Warbler, so wisely yet curiously

re-built to prevent the encroachments of the Cowbird. The Ovenbird, that often burrows beneath the dead leaves and constructs its dome-like home so beautifully concealed that it is only discovered by accident. One of the most artistic of nests is the home of the Hooded Warbler. A rare nester, but I have had the good fortune to meet with over a dozen of these fairy homes, and all were composed in the body of bleached leaves of the sugar maple, giving a pleasing appearance to the structure.

MORRIS GIBBS, M. D.

Kalamazoo, Mich.

To be continued.

Robins' Roosts Again.

Your article on Robin's Roosts in the February issue leads me to speak further on the subject. It is unusual to meet with large roosts in the Great Lake Region, and in my experience I have known of a flock of these birds which exceeded one hundred. But in the south the Migratory Thrush is to be found in thousands in the migrations; especially in February and early March.

One season about the middle of February these cheerful birds were observed in immense flocks on the eastern coast of Florida, in Brevard county and below the 28th. parallel. Their route of migration was probably via the Bahamas as they appeared with a rush and had not been recorded that year '94 in the State to my knowledge. One morning thousands were to be seen all about the place. They were in live oaks, palmettoes and even in the mangroves which line the shores of that long lagoon, the Indian River. But most of the birds kept upon the ground where vast flocks were to be seen feeding at all times of the day. Plenty of cheerful chirps and other small talk were indulged in by the immigrants from the Bahamas, but there was not a full song to be heard from any one of the flock. At night the Robins roosted all about

us and hundreds must have selected the mangroves for a lodging house as they were seen skipping about in the almost impenetrable tangle just at dusk, while later their cheeps could be occasionally heard as they composed themselves to rest. It is generally supposed that Robins and other thrushes and in fact all of the perchers migrate at night, and this has been proven satisfactorily in most cases, birds are very leisurely in their migratory movements and frequently remain in a locality for several days in spring as well as autumn.

The large majority of these birds remained at that location for two days, while the last of the flock was seen as late as five days after the first appearance. Not another Robin was seen that season, and I watched carefully until late April. MORRIS GIBBS.

John A Dakin.

Mr. John A. Dakin an associate member of the American Ornithologists Union, died after an illness of six days of spasmodic colic, at his home in Syracuse, N. Y. Feb. 21, 1900, at the age of 48 years. Mr. Dakin was born at Hillsdale, Columbia Co., N. Y. in 1852, but when a small boy moved to Tully, N. Y. with his parents, where he received his first education in one of the district schools. When he was hardly old enough to roam over the hills and through wood and swamp his love for birds began to develop, as it was his delight, day after day, to watch and listen to the Bobolinks and other birds as they flitted and sung by the roadside as he passed on his way to school.

Above the window at his home a pair of little wrens had made their nest in a box, and it was his delight to watch and study these little creatures that he might learn their habits, and they were called by the family, John's birds.

When he was scarcely eight years old he had innumerable birds' nests, and

it pleased him to show them to other boys, but at this age he was never known to rob a nest of its eggs.

He first became interested in stuffed birds from a local Taxidermist and it was his ambition to learn how to do it, and he said if he ever learned, he was going to mount a Scarlet Tanager, Bluebird, Golden Oriole, and a Robin as he thought then, they were the most beautiful birds in the world.

□ But Mr. Dakin almost reached the age of manhood before he learned how to make a bird skin; having met Mr. Albert Brainard, now of Red Lands, Cal., who gave him his first instructions and he immediately became enthusiastic in a collection of local birds.

It was his habit to rise early every morning and roam about the hillsides and through what is now known as Barney's Swamp, and along the shores of Tully Lake in pursuit of a greater knowledge of birds. He accumulated a vast amount of information concerning the local birds and collected specimens of most of the species known to occur in Onondaga Co.

In 1882 he went to Florida and hunted through the Everglades and along the Oklawaha River, collecting information and specimens of the birds in that region. While there he also gave a great deal of attention to the Heronries which were then innumerable on the brushy islands and shores of White Lake.

After being in Florida four years he came north and fixed his home in Syracuse.

In 1888 he again returned to Florida and took unto himself a wife after which he returned to Syracuse and engaged in business.

In 1893 he took up the study and collection of Lepidoptera which he pursued with equal enthusiasm with birds, and when he died he possessed one of the largest collection of N. A. Lepidoptera in this section.

Mr. Dakin had a competent knowledge in other branches of natural history but devoted most of his time to birds and later to insects.

Mr. Dakin was a charter member and founder of the Onondaga Academy of Science and contributed many valuable papers on the birds and insects of Onondaga Co. He was a great advocate of bird protection and read many papers before schools and other societies and has done a noble work in this cause. He was gifted with a graceful pen and his simplicity of description made his writing peculiarly attractive.

It is impossible to speak of him in too high terms as a friend and as a man he possessed a singularly attractive personality which endeared him to all, and his honesty, modesty and lofty principles won for him universal esteem.

By his death the Union and scientific world loses a valuable and able contributor to Natural Science, and his large circle of friends mourn that they have lost a true and very dear friend who from his boyhood days has been a lover and devotee to Natural History.

A. W. PERRIOR.

The Arctic Three-toed Woodpecker in Western New York.

BY CORNELIUS F. POSSON, MEDINA, N. Y.

The Arctic Three-toed Woodpecker, (*Picoides arcticus*) is not often observed in localities so far removed from the arctics as is this.

A skin just recently received from Murray, this county, and the recollection of another specimen also taken in this county some seventeen or eighteen years ago, suggest to me that a brief sketch upon this rare Woodpecker and its occurrence here might not be inappropriate.

We have in the Eastern United States two species of Three-toed Woodpeckers, the Arctic and the American, both

inhabitants of the north and lovers of cold weather. Contrary to what might be expected from their names, the Arctic is not quite as northerly as the American.

These Woodpeckers differ from others in having yellow on the head of the male instead of the usual red; and in having but three toes instead of four. Very strange indeed is this pedal alteration. We say that never is there anything superfluous in nature,—that everything has some office, even though it may be but for ornament. But how about four toes for a Woodpecker? Nearly all Woodpeckers have them and yet here is a species with but three, and in all his journeys up and down the tree-trunks, he is just as nimble, spry and agile as the others. Certainly here is something superfluous in nature at least. Perhaps it is the exception that proves the rule.

The Arctic Three-toed Woodpecker is eight to nine inches long; wing $4\frac{1}{2}$ to 5; tail $3\frac{3}{8}$ to 4. Back, uniform black; sides of head, striped; sides of body, barred with black and white; under parts, otherwise white; quills with white spots, paired; tail feathers unbarred, the outer white, the central black. In the male the crown has a square patch of yellow about the size of a ten cent piece. In the female, this spot is wanting, the head being a glossy black uniformly with the rest of the upper parts.

Its habitat is Northern North America, from the Arctic Regions south to the southern border of Canada. The food of these northern Woodpeckers is of a nature calculated to render them the most beneficial, economically considered, of all the Woodpeckers. The few stomachs examined by the U. S. Department of Agriculture showed 83 per cent. of their food to be of animal matter, while only 17 per cent. was vegetable. Of the 83 per cent. of animal matter, 63 per cent. consisted of

wood-boring beetles; 11 per cent. of Lepidopterous larvæ (caterpillars), probably also wood-borers; and 9 per cent. of adult beetles, ants and other Hymenopterous insects. Thus does this energetic bird with but three toes do much towards the preservation of the stately pines in the Northland where he dwells.

So far as I know there are no records for the occurrence of this northern Woodpecker in Western New York excepting the two instances here related by myself.

The first of these instances is of a male specimen taken about October 15, 1882, on the bank of Oak Orchard Creek near Two Bridges (Carlton) by Mr. Andrew Jewett of Albion. It was hammering and feeding in the dead top of a pine tree. If visits are to be expected from this northern bird, we should certainly look for them in the midst of the cold of the winter, and so it is somewhat remarkable that this bird should have been taken here so early in the fall. But there is no chance for any mis-identification in this case, even though this specimen has now been lost trace of, for the yellow crown-patch and the three toes, and the uniformly black back, are features which even the un-technical observer would use in diagnosis, and of these three features Mr. Jewett has a vivid recollection.

The second specimen referred to was only recently taken and is now in my collection through the kindness of Mr. F. A. Macomber of Murray, this county, who secured it near that place on the 23d of February last. It was on the banks of Sandy Creek near what is called Arnold's Pond. When first observed it was in a hemlock, but soon flew out and alighted upon a beech near its base. Mr. Macomber, recognizing it as something out of the ordinary, at once shot it, and mailed the skin to me, same now being in my collection. It is a female, the crown-

patch, of course, wanting; the entire upper parts being uniformly black from the bill.

The specimen exhibits the following measurement: Length, 9.25; wing, 5; tail, 3; bill, 1.12; tarsus, about .75. It was on February 23d this bird was taken. In the days immediately following a sudden cold snap with snow and zero weather followed. Evidently this bird moved southward just in advance of the cold wave.

And so it is that our little county of Orleans claims record for the only two occurrences, so far as known, of this rare Woodpecker in Western New York. If there are other occurrences, I have been unable by perusing all the ornithological publications of the country for several years back, to find any record of them.

When shall we begin to say that there is nothing left to learn about birds, or that the chances are small for securing anything rare any more; or that winter has no advantages? Indeed the winter offers great opportunities to the student of birds. Only last week (March 8th) when the landscape was everywhere covered with a thick mantle of white a company of six White-winged Crossbills (*Loxia leucoptera*) visited the pine trees in the door yard next adjoining my own, feeding upon the cones. Males they were in bright plumage, and very interesting because very rare.

Such occurrences as these make the enthusiastic bird-lover to exclaim in the words of the poet:

“Winter! I love thee
All unlovely as thou seem'st
And dreaded as thou art.”

The Nesting of the Ruffed Grouse Within City Limits.

In the early spring of '98 it was my good fortune to discover a nest of the Ruffed Grouse. On May 8th. I was walking through a small patch of woods

looking for crows' nests. I happened to look under a small pine tree by the side of the path and much to my surprise I saw a female Ruffed Grouse sitting there. Her plumage blended so perfectly with the dead leaves that it was purely by chance that I noticed her. She evidently thought her disguise was perfect as she did not move a feather. I stood looking at her for fully three minutes until my curiosity got the better of me. Kneeling down beside her I gently touched her tail feathers and off she went like a shot. I was interested to note that as she did so she brushed some dead leaves over the eggs with her wings and feet. So successfully was this done that the eggs were almost wholly covered. Carefully picking the leaves off I was delighted to find a set of eleven eggs. These afterwards proved to be very slightly incubated. After the female had been flushed from the nest, I did not again catch a glimpse of her. The eggs were laid in a slight hollow in the ground lined with dead leaves and a few feathers. It was interesting to note that this nest was within 50 yards of a road and within a few yards of the boundary line marking the limits of the city of Boston.

ABBOT PETERSON,
Jamaica Plain, Boston.

Least Bitterns Observed in Pennsylvania.

While camping on Ten Mile Creek near Hackney's Station, Washington Co., Pa., with two friends, I found the Least Bittern in small numbers. On July 5, 1899 we were at the creek, I was for turtles. The other two had gone up a smaller stream. I heard them shooting and when they had returned they presented me a mangled Least Bittern. One shot from a 32 20 Marlin rifle did the work. They had flushed it from the bank of the stream (in which the water was but a few inches deep) and it had flown about fifty yards and lit on a

fence post, then they shot it with a rifle (the shotgun being at camp.) The same day I saw another flying through the air about fifty feet high. While we were there we saw several more. I knew the bird at sight for I have found them breeding in Northwestern Missouri. I have a set in my collection which I collected in Atehinson Co. Mo., June 27, 1898. In Warren's "Birds of Pennsylvania," he says: "The Least Bittern I have found in this State only as a rather rare visitor during the spring and fall migrations. This species is sometimes, though rarely, observed in Pennsylvania during the breeding season." It is said to breed occasionally in Crawford and Erie counties. It is my opinion that they breed here. I intend to visit this locality the coming season and will try and find out if it breeds here.

E. R. Forrest,
Washington, Pa.

An Early Sora.

We have had in Buffalo and vicinity a very heavy snow fall, during last week and March 5th, a very heavy wind blew from southerly direction. A young man living in one of our residence streets, going into the yard, saw a queer looking bird struggling in the snow bank. He experienced no trouble in catching it and bringing it into the house. The next day he brought it to me for identification. To my surprise it proved to be a Sora or Carolina Rail, which usually make their appearance from the south in this vicinity in the middle of April. As these swamp birds travel very slow during their migration and never fly very high, the birds must have been thrown out of their course by the prevailing gale. It died the same evening and by dissecting it I found it to be a mere akeleton, with no food of any kind in the body.

Ed. Reinecke,
Buffalo, N. Y.

Our Audubon Class.

Our "Bird Class" called the "Alpha," began its existence in the spring of 1899 and with a membership of about a score. At the present date we have twice that number while the membership is still growing. It is composed of about an equal number of boys and girls and it must be said that the girls are the most enthusiastic workers both in the field and at the meetings. The boys are equally anxious to get in the woods on a trip but they seem to lack in a large part the love for actual study, and prefer ball and boating to actual observation. Perhaps you may wish to hear of our society from my point of view and of the work that we are doing and expect to accomplish the coming season.

Our chief patrons are Mr. and Mrs. C. G. Kleinstuck who live at about a mile and a half from the city, and whose residence we reach by the electric cars running by their commodious house and grounds. This kind couple takes special delight in advancing the cause of the birds and gives time and influence in the furtherance of this worthy project which is to promote the welfare of the bird world, as well as to cause a love for the study among the members of the town and country.

One of the chief attractions in the grounds at "Saxonia" is a large log cabin, built in the Adirondac style, and of huge size. There is an immense fire-place at one end which is capable of taking in great logs and adds one of the many charms to the pleasing interior. The walls are decorated with ancient arms, and the discarded blunderbuss and pepperbox as well as the modern mauser and Cuban machete are arranged with other curiosities upon the well matched logs or capacious mantle. Many fur rugs are on the polished floor, giving an incongruous but not unpleasant appearance to the cabin

of the wilds built in civilized quarters, and when decorative art joins hands with the wilder aspects of the primitive methods of the settlers we are royally entertained in this artistic cabin but our meeting are mainly held weekly in the city, and usually on Thursday afternoon and directly after school hours.

At one meeting we had a contest as to who could name the most species of birds from the pictures. At other meetings we have had bird skins to examine and at all of our meets we have original papers while the older members speak to us on various topics connected with bird life. During the season we have made several trips into the country as a party, while many small parties or pairs of students made many trips in various directions in search of bird notes. In the season of '99 we recorded (76) species of birds in this neighborhood, but of course this list does not include many of the water and shore birds, which are rather difficult to observe, at least by the majority of our class. The smaller summer residents were carefully noted and nearly all of the students were able to name a bird on sight, while many could tell a species by flight, and again, some could name a songster from its notes in nearly every case.

Our bird class has been a great pleasure and we shall continue our investigations the coming season, with the prospect of increasing our knowledge and our membership as well.

The suggestion is made that all bird-lovers take up the work of bird protection in their neighborhood and form societies for the study of our feathered friends. In addition to the economic value to be gained by protecting the beautiful and useful birds of our land, we shall also have the pleasure of familiarizing ourselves with the songs and habits of our little summer neighbors. We can watch their ways with-

out destroying them, and all readers must know that our birds need protection, for they are too often needlessly destroyed. I am a believer in collecting specimens, but there are limits, and it is hoped every boy and girl will deal fairly with the graceful pleasing birds of the fields and woodlands. Do not let greed make you forgetful of the rights of these "favorites of creation" as they have been so beautifully called. It is far from necessary to shoot so many birds and gather so many eggs in order to make an impression on a naturalist. Your actual worth as an observer will be far more appreciated if you study their habits and take notes in your field book. A well filled note book is far more entertaining than a collection of eggs and skins of which the gatherer knows next to nothing.

Now do not think that I am trying to diminish the true worth of the legitimate collector. On the contrary I am in favor of collecting but there are limits, and I am speaking in favor of the birds. Be reasonable fellow collectors and make it a point to spend more time with your note book and less with your skinning knives and blow pipes.

KATHRYNE GIBBS,
Kalamazoo, Mich.

A Tame Shrike.

About the 1st. of February while out walking I noticed a Loggerhead Shrike, (*Lanius ludovicianus*) sitting on a tree in the yard. I said "Halloo Butchie" and great was my surprise to see it hop around and look at me, then I knew it was the same old bird I used to feed from my hands. I hunted around and collected nine crickets, eight of which he took from my hand. I think it is very strange that he should remember this for he had not been fed before for eight or ten months. This bird had evidently heard that the "early bird catches the worm" for he was seen several times with nest material in his bill, February 10th. This bird had never been tamed.

DONALD B. OHLINGER,
Winter Haven, Fla.

An Easter Offer.



To any person who will send me \$1.00 in acceptance of the **\$2.75 for \$1.00** offer which I make in March OÖLOGIST, and will enclose 10 cents additional to help cover mailing expenses, I will send *gratis and prepaid*,

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purchaser's selection.

Thus for only \$1.10, you will receive *prepaid*, THE OÖLOGIST one year, one Exchange Coupon, and Premiums to the amount of \$4.00, your selection,

All for \$1.10.

In case you have already sent in your subscription for 1900, you can have THE OÖLOGIST mailed to some nature-loving friend and the Premiums to yourself, or vice versa.

This Offer will hold good during the month of April only—no later—and is made, first, to increase THE OÖLOGIST subscription list; second, to reduce a very large stock of the Premiums offered; and third and last (but not least) to get your money—for which I offer you more than double value.

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On receipt of \$1.00, cash or stamps, I will send full printed instructions for mounting birds, heads, mammals, etc., and all materials for mounting and preserving specimens—including prepared compound, together with full directions for dressing skins with the hair on—for rugs and robes, so that you will not be to the expense of one cent and will send full directions how to start a class.

Remember I guarantee satisfaction or money refunded.

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THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO
OOLOGY, ORNITHOLOGY AND TAXIDERM.Y.

VOL. XVII. NO. 5.

ALBION, N. Y., MAY, 1900.

WHOLE No. 166

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Brief special announcements, "Wants," "Exchanges" "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

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| 170 | " | " | " | Sept. 1900 |
| 173 | " | " | " | Dec. " |
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WANTED:—Eggs in sets with nests of all Warblers, Waders, Vireos and Thrushes. Send list of what you have and cash or exchange price. Send 10c for large illustrated catalog. CHAS. K. REED, 75 Thomas St., Worcester, Mass.

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FOR EXCHANGE.—5x8 Scoville camera, complete cost me \$25, for best offer in sets, shells or minerals; also offer beautifully colored butterflies mounted in Denton's tablets, very fine, for any of above or Davie's Taxidermy or Smith's List of Butterflies of North America. Have tree shells of Cuba for sale. WM. N. SOUTHER, Groton, Mass.

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NOTICE.—Owing to lack of specimens and rush of other business I shall be unable to make more exchanges until fall. GUY BRIGGS, Livermore, Maine.

I HAVE a good many back numbers of magazines (some complete files), such as Osprey, Museum, OÖLOGIST, Nidologist, Popular Science, Oregon Naturalist, etc. Will exchange for books or any good curios. Send for list if interested. W. H. HILLER, 147 W. 23d St., Los Angeles, Calif.

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PARTIES wishing A 1 fresh skins of Manitoba Birds, Downy young, choice sets of eggs, with or without nests. Send in your wants to CHRIS P. FORGE, Taxidermist and Collector, Carman, Manitoba.

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WANTED.—Will trade books of all kinds for good matched pairs of Ivory Elks teeth or single teeth; also collections of U. S. stamps bought for cash. Address, HALL N. JACKSON, 36 W. 6th St., Cincinnati, O. 170

HAVE YOU any well mounted Butterflies or showy insects to exchange for eggs this season? Send list. W. H. HILLER, 147 W. 23d St., Los Angeles, Calif.

FOR SALE.—About one doz. Moose feet cut at hock and knee. Make nice fancy table or stool, 50c each; Golden Eagle, skin fresh, \$5; Rough-legged Hawk, \$1.50; Saw-Whet Owl, \$1. These are snaps. CHRIS P. FORGE, Carman, Man.

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WANTED.—The 2nd and 4th annual Report of the Bureau of Ethnology. Will pay cash if cheap. J. S. ALLWOOD, Hecla Works, N. Y.

AS SOON as the present collecting season is over I will have a number of Calif. sets to exchange for sets or singles of common showy eggs. Desire especially sea birds. W. H. HILLER, 147 W. 23d St. Los Angeles, Cal.

FOR EXCHANGE.—Good Student's lamp for eggs in sets, pairs, or singles. Also will accept Indian relics, curios, etc. Be quick. C. A. WHITE, Salineville Ohio.

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HEAR YE! Hear Ye! Hear Ye! This is to certify that my advertisements in the OÖLOGIST have paid me better than have the combined ads. in most of the amateur and natural science papers. Ads. in the OÖLOGIST always bring returns, and it is safe to say that there is no paper having three times the circulation of this widespread periodical which can give equal satisfaction. MORRIS GIBBS, M. D., Kalamazoo, Mich.

WANTED:—Skeletons and Skulls, all kinds, in rough and mounted, Bird and Mammal Skins, Reptiles and Batrachians in alcohol or formalin. Desire correspondents in all parts of United States, Mexico and Canada. Back numbers of papers on Natural History and scientific books wanted. Offer in exchange fifty species finely prepared invertebrates in formalin, eastern bird skins, etc. Correspondence solicited. F. P. DROWNE, 20 Benefit St., Providence, R. I.

INSECT PINS:—150 best assorted and 3 sheets 3x4x1-16 inch cork. All prepaid, only 20c. FRANK H. LATTIN, Albion, N. Y.

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FOR EXCHANGE.—A. O. U. No's. 16, 127, 194, 155, 293, 360a, 373i, 376, 375d, 381, 407, 429, 430, 431, 433, 434, 426, 460, 462, 466, 471, 475, 481b, 482, 486, 487, 505a, 592, 620, 633a, 683a, 707a, 708, 710, 717b, 721a, 725a, 743a, 751a. Will exchange these for desirable sets of other localities. I especially wish to exchange series for series. Many common ones wanted. Will also sell sets of 3-127 at \$1.00 per set and 16 80-1 at 50c per egg. These are part of my private collection and especially prepared. W. LEE CHAMBERS, Santa Monica, Cal.

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ERNEST H. SHORT, Albion, N. Y.

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| Rusty Song Sparrow..... | 50 | 30 |
| Snowflake..... | 35 | 15 |
| Parula Warbler..... | 25 | 20 |
| Black-throated Blue Warbler..... | 35 | 25 |
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THE OÖLOGIST.

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ALBION, N. Y., MAY, 1900.

WHOLE No. 166

THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND
TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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Work to Do.

RICHARD C. MCGREGOR.

Among the many readers of THE OÖLOGIST there are probably not a few bird and egg collectors who have been exsolated with, for their wanton and

cruel acts, by well meaning acquaintances. When we remember that these people do not understand the pleasure of wading knee-deep in the marsh for Coot's and Blackbird's eggs, or of tramping twenty miles a day for a Hawk's nest, we can smile and forgive them. But what rasps one, is to read the opinions expressed by some of our ornithologists. That they do no end of collecting themselves we have abundant evidence. Still these very men advise us to limit our collections to one or two sets of eggs and three or four skins of each species. They tell us to study birds with a field glass and if we want to see a bird in the hand, to go to some of the numerous large public collections. That may do well enough for those in Washington, Philadelphia, or New York, but there are a few bird students who do not live in or near any of these large cities.

If the American Museum and the Philadelphia Academy of Sciences bring together large series of skins, are we not justified in following so good an example? Those high in authority say: No, but they do not give the real reason which is just this. The museums have fireproof buildings, curators to care for specimens, and scientists who study this material, making contributions to the sum of scientific knowledge. With these large collections, carefully preserved, they are able to discover new facts in regard to moulting, distribution, variation in plumage, etc.

Now a beginner gets birds and eggs much as a philatelist collects stamps, to see how many kinds he can find. He goes on in this way for from one to three years, and then, the novelty of mere collecting being lost, the whole

lot is discarded and forgotten. No real use is made of these birds.

So the reason we are discouraged from making large collections, is that so many of us never make any real use of the birds, and to destroy life for no better reason than has the stamp or coin collector for his business, is not justifiable. But the beginner may have a genuine interest in birds, and may be willing to work hard to add his part to science. Every ornithologist has to make a start by collecting, that he may know the birds. So every chance should be given him that he may do good work. It is for this reason that I wish to tell him some of the things which may be studied at the same time he is making his collection.

To identify your specimens is the first step in any branch of zoological work. If in a new field you may find undescribed species and they are to be attended to. But among birds there is little of this work. Ornithology stands at the head in systematic work. In no other branch of zoology is the nomenclature so nearly fixed. Practically all the species and sub-species of North American birds have been named and fully described. The eggs of nearly all species on our check-list are known.

Several of my personal friends have begun on birds, but finding the race for novelties too keen, have gone over to fishes, mammals, insects or plants. These men will affect to despise systematic work and will tell you that they do not like to be troubled with naming new species, yet I find these very men have done the most in that line and often have done nothing else.

New species of birds are now to be had only by travel in far countries, contending with tropical or polar temperatures. For those who must remain at home and who have plenty of time it is left to take up other, but equally, valuable and interesting work. For these I wish to make a few suggestions as to what is to be done.

There is nothing new here, only a gathering together to give the novice some idea of the rich harvest which awaits him, requiring only patience and accurate observation for the reaping. There may be uncertainty as to what your results will be, this makes the discovery all the more delightful, but that you will find something there is no doubt whatever.

In the first place keep a note book and write down everything you find out, for even the most common facts will escape your memory.

1. Local list.—Keep a full list of all species which occur in your locality, when they are with you, how abundant, and the kind of country each inhabits.

2. Migration.—Notes on migration belong with the local list.

3. Nesting records.—These should include dates of all nests found, number of eggs or young, actions of parents, etc. A complete investigation of some one species or genus may be taken up. Howe's "Breeding Habits of the American Robin in Eastern Massachusetts" (*Auk*, XIV, 162,) is an excellent model and shows what may be done on a common species.

4. Incubation.—This is a life time study in itself. Nothing is known of the necessary conditions of moisture and temperature and but little as to the normal period of incubation.

5. Food.—Very little is known, except in a general way, of the normal food of birds or about the effect of various foods. This may be studied by direct observation of the wild birds, from stomachs, from pellets of such species as eject food remains from the mouth, and by feeding captive young and adults.

6. Studies on young.—This may be carried on along several lines at once, quite enough to keep one observer busy during all his spare time. Some of these lines are food, feather growth,

growth in weight, instinctive habits, and experiments on special senses. Owen, on "A Captive Hermit Thrush," (Auk, Jan. 1897,) gives many valuable hints for the study of young birds. The same observer has reported on the growth of the young Song Sparrow.

7. Feathers.—Under this head we may study the relative development of the feather tracts, rate of growth in wing and tail feathers, and the phenomena of moult. A very simple and easy observation to make is the number of feathers cast each day during a moult. Chadbourne, (Auk, XIV, 140,) says; "In the living bird accurate data of the loss before and during the progress of a complete moult are, I believe unpublished." A lookout should be kept for albinism, melanism and hybridism.

8 Variation.—This is a subject with which but little has been done. It requires a very large series of one species and is best undertaken by those situated where two sub-species overlap, that is, where intermediate forms occur.

Do not think that I decry the making of a collection. You should have a fair series of each species found in your locality, so that you may recognize any straggler, hybrid or strange plumage. Collect all the specimens you need for working out an uncertain point. If you do not recognize a bird, shoot it. But do not make a collection to show your friends, or to have more than any one else in the town. Make the most of every bird you kill and when you discover something new or unusual, write it up for publication so that others may know the results of your work.

Some Winter Birds of the Island of Vieques

BY B. S. BOWDISH.

The Island of Vieques lies about fifteen miles off the eastern end of Porto Rico and in general topography much resembles it on a smaller scale. In ex-

treme length and width it is about twenty-one by nine miles. Some of the hills are still clothed in forest a portion of which exhibits the dense tangle of vine and bush of innumerable species of the tropical forest, also some of the creek bottoms are likewise thickly grown with small growth, but the virgin forest, the giant trees of the primeval timber are gone forever, a sacrifice to the cupidity and vandalism of Spain.

In valley and on hillside in many places acre upon acre of sugar cane waves in the breeze in an uninterrupted expanse. Over other like expanses the luxuriant growth of grass furnishes an abundant pasturage for numerous oxen. Small tracts here and there are devoted to gardening. Throughout the open country occasional trees and copses of bushes are scattered. The fences are many of them hedges of the "Spanish bayonet" cactus, and these hedges intergrown thickly with rank grass form havens of retreat for many birds—and also for the Mongoose. This latter and a wood rat, nesting in trees, have undoubtedly effected the avifauna of the island to a very large extent. Ground nesting birds must have been seriously disturbed by the extreme abundance of the Mongoose which in predacious habits surpasses the ermine or mink. A representative of the Bob-white formerly recorded from the island of Porto Rico seems to be rare now if not quite extinct.

In presenting this list I would say that it is the result of some three months observation in November and December of '99 and January and February of the present year, made under many difficulties and that I was constantly hampered by military duties.

The Gulls and Terns seen were none of them secured hence remained unidentified and the same was the case with the majority of the water birds. Consequently the list chiefly represents the more conspicuous winter birds of

the island and lays no claim to even an approach to completeness.

Pelecanus fuscus. Always abundant and often easily secured. A male shot Dec. 23d contained in stomach and throat 27 herrings averaging about four inches each in length. I removed and preserved from the inside of the body close to the stomach three small parasitical worms. This pelican measured, length 45½ inches, extent 79 inches.

Fregatta aquila. Often seen singly or in twos and threes soaring over the surf near the beach fishing, sometimes in company with the pelicans. A male secured Dec. 16th, disgorged a sharp-nosed fish about 8 inches in length. Stomach was empty.

Florida coerulea. Common though not as abundant as the next.

Ardea virescens. Very abundant on the lagoons at the mouths of creeks these herons were nearly always found from one to a dozen specimens, sometimes associated with *coerulea*.

Actitis macularia. Quite a common bird along the beach and on the lagoons. Sometimes associated with the following.

Egialitis wilsonia. Seen a few times in flocks of a dozen on the beach. One male secured Nov. 5th. None were seen after Dec. 1st.

Columba —? Common. Three specimens secured. The only large pigeon noted.

Zenaidura macoura. Very common. Apparently not so common as the foregoing. A number were seen in twos and threes feeding on the ground much after the fashion of Bob-whites. Dec. 30th I secured a male.

Columbigalma passerina. Quite abundant.

Buteo borealis. Several pair were noted and they probably breed here. Shot Jan. 26th. The stomach contained the bones and fur of a rat probably of one of the wood rats.

Falco dominicensis? Sparrow hawks

are not apparently abundant. On Dec. 17th. I shot a male and Jan. 18th I shot a female and while putting it up the male came to the same tree from which his mate had been secured and I got him also. They seem much less suspicious than the bird of the State. The male above referred to came within ten feet of me when alighting in the tree. Prof. Richmond who is here with Prof. Stejneger collecting, would not pronounce positively on these birds whether they were *dominicensis* or *cribaeum*. The stomach contents in the first of the three hawks above mentioned was far digested and not identifiable. Of the other male were grasshoppers and the fur and bones of a mouse, while the stomach of the female contained grasshoppers only.

Pandion haliaetus carolinensis. Two pair were noted and the male of one secured Dec. 31st. Stomach was empty.

Crotophaga ani. Very abundant and often seen in large flocks, feeding in the pastures and along the creeks. They must breed very early for on Jan. 28th I shot from a small (probably family flock,) five birds of which two were young, male and female respectfully, on the wing, but undeveloped in size and plumage. Stomachs of a fair series of these birds show insects, seeds and fruits chiefly the latter two. In Vieques I meet with no example of their nesting but in the mountains back of Catania, P. R., July 21, '99 I found a pair working on a nearly completed nest about twenty feet from ground in a tree at the edge of woods and by the foot of a hill. The nest was apparently almost wholly constructed of twigs and was roofed like the nest of a magpie.

Coccyzus minor dominicata. Several were noted but none secured. On the main Island I shot one.

Ceryle alcyon. Shot male Dec. 10th. Noted a number of pairs on the creeks.

Melanerpes portoricensis. Fairly common. The only Porto Rican representa-

tive of the *Picidae*. In habits much like the Red-headed Woodpecker of the State, with simular garulosity.

Antrostomus carolinensis. A number were noted in one creek bottom two females secured. (A Hummer was noted similiar to specimens secured on the main island, but as these are un-identified they cannot be included.)

Tyrannus dominicensis. By all means the commonest bird of its class. A fair series were obtained and stomach contents proved that the birds do not confine themselves to insects, as berries and seeds of same were often found in them.

Pitangus taylori. Quite common though not nearly so much so as the preceding species. Probably not always separated from *Tyrannus*. Often associated with the above.

Myiarchus antillarum. Not so abundant as the above. In habits quite similiar to the Phoebe which it resembles to quite an extent.

(Probably *Icterus portoricensis* is found on the island as it is very abundant on the main island, but as it was not noted it cannot be included.)

Quiscalus brachypterus Common. Often noted in large flocks.

(*Ammodramus savannarum* and *Pyrrhuloxia portoricensis* were neither of them noted but most likely occur.)

Erethia bicolor. One of the most common birds. I found them breeding from Nov. 15th to Feb. 9th, the day before I left the Island on which day a nest found containing one fresh egg. The composition of the nests is commonly fine dry grass, rootlets, skeleton leaves, etc. It is shaped much like the nest of the Marsh Wren, a ball of grass etc., with an entrance in the side and is commonly built in a bush or small tree at an elevation of 2 to 10 feet. It is not always distinguishable from the nest of the Honey Creeper but is usually not so bulky nor so firmly and well built. Sets consist of two or three

eggs. No sets of four were noted. Set $\frac{1}{2}$ Nov. 15th nest fine grasses, rootlets, skeleton leaves, etc., 7 ft. from ground in fork of bush in pasture. Eggs fresh. Set 2-2 Nov. 19th, fresh. Nest same as last 6 feet up in small bush by roadside. Set 3-3 Nov. 19th far advanced, nest fine rootlets, skeleton leaves, weeds and grasses, 8 ft. up in bush by roadside. Set 4-2 Nov. 25th far advanced, nest fine grasses, weed stems, skeleton leaves, 4 ft. from ground in top of bush by fence near creek. Set 5-3 Nov. 27th, 1 fresh 2 slight. Nest same composition as foregoing, 3 ft. from ground and fairly well concealed in thick bushes in pasture. Set 6-3 Nov. 30th, far advanced, nest dry grasses and skeleton leaves, measurements outside diam. $3\frac{1}{2}$ in. inside, depth 6 in. inside, $1\frac{1}{2}$ in., $2\frac{1}{2}$ ft. above ground in tops of Spanish bayonet and grass by edge of woods.

Set 7-3 far advanced, nest entirely made of dry grasses, measurments outside diam., $5 \times 2\frac{1}{2}$ in. inside, $1\frac{1}{2}$ in. outside, depth $4\frac{1}{2}$ in. inside, $2\frac{1}{2}$ in., situated in dense wall of a kind of jointed climbing grass and being composed of the same material was extremely well hidden. A chance blow on the grass with a stick caused the bird to leave, thus drawing attention to the nest. Going back to this nest which was in a woods on a hill, on Dec. 30th, to obtain a photo of this unusual nesting site, I was quite surprised to see the bird again leave the same place. Examination disclosed a nest exactly similiar to the one of set 7-3 and placed in same spot.

The sun being at the time hidden, it was necessary to make a time exposure so an improvised tripod was constructed of poles bound with vines. Soon after the nesting site was photographed the sun coming out, I made a photo of the tripod with my partner standing beside it drawing a bead with my gun on imaginary bird above.

Set 8-3 Dec. 19th, far advanced, nest dried grasses, skeleton leaves, fine root-

lets and horse hair, measurments, diam., $3\frac{1}{2} \times 1$ in., depth $8 \times 1\frac{1}{2}$ in., situated in tips of limb of tree 8 ft. above road. Set 9-3 Dec. 30th, fresh, this was the second set from the nest in the bank of grass. Set 10-3 Feb. 9th, fresh nest, fine roots, weed stems, skeleton leaves, etc., in tips of slender bush growing from mass of Spanish bayonet, on bank of road 10ft from ground.

Set 11-3 Feb. 9th' fresh nest composed of fine dead vines and situated in a mass of some hanging from limbs of tree by pasture fence. Was very inconspicuous.

This bird is rather shy in its habits, is not a close sitter when the nest is approached and will not come within close distance of nest while intruder is by remaining most of the time concealed in bushes.

Euthia brijecita. Not quite so common as preceeding. Though they were undoubtedly breeding and though I shot a female Jan. 30th containing an egg nearly to be deposited, I failed to locate a nest.

Progne donimicensis. A few noted in village just before our departure. Would probably have become common a little later.

Vireo calidris. A few noted.

Coerborba porto ricensis. Abundant. nests with eggs were taken Feb. 4th, Feb. 7th, and 9th. In structure and location they are much like those of *Euthra bicolor* with the differences noted in the description of that bird. Three or two eggs is the common number; I have taken but one set of four.

Miniotilta varia. A few noted. Three specimens taken.

(*Dendroica ruficapilla* must I think occur but strange to say was not noted.)

Dendroica coronata. Three specimens in moulting plumage showing approach of summer plumage, were taken.

Dendroica discolor. Abundant. A number of specimens taken.

Compothlypis americana. Abundant

This and preceeding were by far the most common warblers.

Seiurus aurocapillus. Several noted. One secured

Seiurus motacilla. Noted a number and secured two females and a male. According to Prof. Richmond this bird was recorded from Porto Rico, and I gave him one of the skins for the Smithsonian.

Setophaga ruticilla. Secured two males and noted several others.

Minus polyglottos orpheus. Not abundant when we went to Vieques but becoming common and vociferous as we came away.

Margarops fusatus. Not uncommon in the creek bottoms but extremely shy and secured with great difficulty keeping mostly well concealed in trees and bushes. Many of the notes of these birds resemble certain notes of Robin and of Wilson's Thrush in states and the alarm cry is scarcely distinguishable from that of the Catbird. I secured two females Jan. 28th.

(*Mimocichla ardosiacea* which I found commonly on the main island was here not noted but probably occurs.)

Our Western Blackbirds.

499a CALIFORNIA BLACKBIRD. (*Agelaius californicus*:—Our western redwing, formerly known as the Bicolored Blackbird, is a common summer resident in the marshes of Santa Clara Co. California. The date of their arrival here in spring is usually about Mar. 1st, although I have noted them as early as Feb. 8th. and it is indeed a pleasant reminder of spring to hear their cheery "quong-quer-ree" after the long winter is over. The first few weeks after arriving here is spent in company with the Brewer's Blackbirds feeding in large flocks upon the wheat and barley in the hay fields which have just been sown at this time, but as the spring advances, they break up into smaller com-

panies and locate in the hay field or tule swamp in which they intend to nest.

Nest building is begun about the 1st. of April and the site is usually a clump of tules in a swamp, although a bunch of mustard in a grain field is sometimes selected. As I have never seen a male bird carrying nest material, I believe the female does all the nest building, although I am not well enough informed to say positively. The nests are all alike, a typical one being a compact structure composed of tules and rushes, lined with fine dry grass.

There is always more or less mud in composition of nests found in the tule swamps, but I think this is caused by the birds using dead rushes for nest building, which are perhaps lying in the mud. This mud dries in time and gives the impression that the birds placed it there intentionally. Nests found in grain fields or away from running water never have any mud in them, and are loosely constructed of straw and dry grasses, lined with fine dry grass and sometimes horsehair. In tules the nests are seldom higher than two feet above the water, while in grain fields the average is usually three and sometimes even four feet up. I think that perhaps the water under the rushes gives the birds a sense of security which those building above land cannot have, for the danger of having their nests robbed by snakes, or their fledglings destroyed by prowling cats is thus materially lessened.

I remember when I was a small youngster a terrible commotion which I once noticed among the Blackbirds adjacent to our home. The birds (there must have been over one hundred of them,) were all hovering over a certain spot in the field and making a terrible noise, so I constituted myself an investigating committee of one to find out the trouble. Upon nearing the spot I found a huge gopher snake entwined

about a large mustard stalk to which a blackbird's nest was fastened, and just in the act of swallowing a young blackbird almost ready to fly. Two suspicious lumps in the snake's body were circumstantial evidence enough to convict him of murder in the first degree, while one young bird perched upon the far edge of the nest was viewing in wild eyed horror the disappearance of bird No. 3, and no doubt speculating upon the terrible fate which awaited him also. The old birds were swooping at the snake and endeavoring in every way possible to attract his attention, but could not succeed. Promptly accepting the office of judge, jury and executioner I took Mr. Gopher snake by the tail carried him from the field and cracked his skull. The bird he was endeavoring to swallow was all this time fastened between his jaws and he could neither get it up or down.

The eggs are three or four in number; and sometimes, but rarely five. Last year I noted a nest containing three young birds and two addled eggs, this being the first nest I have ever seen which held over four. The majority of nests last year held only three eggs. The eggs are bluish white in ground color, and are marked, chiefly around the larger end, with wavy lines of dark brown and black. In comparing eggs in my collection with those of the Redwing; the eggs of the California Blackbird seem to have more and longer lines upon them. Fresh eggs can be taken as early as April 20th. and the nesting period extends through June. After the young have all hatched the birds congregate in large flocks and spend most of the time in the pasture fields until they migrate in the fall.

500 TRICOLORED BLACKBIRD. (*Agelaius tricolor*.—This bird replaces the California Blackbird in the interior valleys of California. It has never been found nesting in this part of the Santa Clara Co. although it has been

recorded as nesting in the marshes near Gilroy and Sargents, about thirty-five miles south of Santa Clara, in the extreme southern part of the county. The nesting and other habits and eggs of this bird are identical with those of the California Blackbird. What has been written of the California Blackbird will apply to this bird also.

510 BREWERS BLACKBIRD. [*Scolecophagus cyanocephalus*.—This beautiful Grackle, usually known as the Tree Blackbird is an abundant resident of this county at all times. He can always be found in the pastures among the sheep and [cattle, where he sits contentedly upon the backs of one of these animals, occasionally pecking a grub or flying to the ground to pick up some worm or other tempting morsel of food. In the winter a flock of these birds will follow a plow and catch the earthworms as fast as they are turned up and they also delight to follow a sower in the grain fields and eat the grain. They are always a sociable bird, several pairs always selecting the same tree for a nesting site.

They like to build in the neighborhood of a house or barn, although I did find several nests in a large weeping willow tree in a grain field about one mile from a house. Nest building begins about the 1st. of April, the nest being composed of an outer layer of twigs, straw and rootlets, cemented with mud or manure and almost invariably lined with a thick layer of horsehair. It is usually placed at the top of a large weeping willow tree in a fork about twenty feet above the ground, or in twigs at the end of a drooping limb, although I have found them in evergreens and flowering shrubs in a garden, not higher than five feet. The earliest date at which I have taken eggs is April, 22nd and from this time until well along in June, eggs may be taken. The eggs range from four to six in number, usually four, and in

color are among the most beautiful of our western birds' eggs, especially for a series, the markings being remarkably variable. A typical set has a ground color of greenish white, with numerous markings and blotches of brown and black, but I always find a few sets every year which are so heavily marked with dark brown blotches as to give the eggs the appearance of being a solid brown color. Of course there are a great many sets to be found the eggs of which vary between these two extremes, and some of these are very odd and beautiful.

Although Brewers Blackbird is not a songster in any sense of the word, and sometimes eats the grain and fruit, I think he more than repays us for the damage he does by his sociable habits. He is also an independent and sometimes a pugnacious fellow. I have often seen one of these birds chase a Western Redtail or Turkey Vulture and peck at them until they were glad to take refuge in flight.

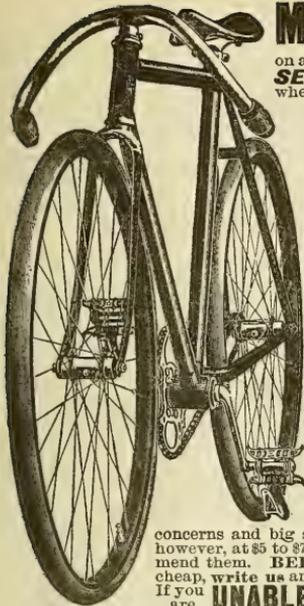
WM. L. ATKINSON,
Santa Clara, Cal.

An Albino Marsh Hawk.

On the 18th day of April, 1900, while traveling the public highway one and one-half miles north of Albion, a bird flew toward me close to the ground that I at once called a hawk but different from anything I had ever seen. Fortunately the bird crossed the road very close and I was able to identify it. It was within 100 feet of me and every feather showed plainly. Its general build, the low flight, and pure white patch at base of tail, left no doubt as to its identity, but the head and neck, all of the back and the wing coverts were of a uniform creamy white instead of the usual brown and rufus pattern.

Of course I had no gun, so the old bird is probably on earth to puzzle some one else. On the 4th, of March last, I secured a fine male Greater Redpoll which so far as I know, has not previously been recorded in Western New York. Its larger size, short, thick beak and wider tail feathers, all serve to distinguish it from the common species.

ERNEST H. SHORT, Albion, N. Y.



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VOL. XVII. NO. 6.

ALBION, N. Y., JUNE, 1900.

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THE OÖLOGIST.

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ALBION, N. Y., JUNE, 1900.

WHOLE NO. 167

THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND
TAXIDERMISTRY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

Correspondence and Items of Interest to the student of Birds, their Nests and Eggs, solicited from all.

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Nesting Materials.

Continued from last month.

The Prothonotary Warbler is an exception to the family by building in a cavity in a stump, and generally near or more often over the water. This is a

strange exception, and a radical change from the Warbler ways, but we will find that there are many variations in habit in all the families of birds, and it may be added that these variations lead a charm to the study. There are no humdrum features in the study of nature. There are constant features of change, and surprises await us constantly as we wander on in our researches. Most of the Warblers make their nests of fine materials, grass, rootlets, strippings from wood-stalks and bark, and lining with soft cottony substances. Some, as the Redstart and Blackburnian Warblers construct durable homes in the crotches of trees, the latter sometimes placing its nest as much as fifty feet from the ground. Others, as the Golden-wing Warbler, construct loosely built nests and on or near the ground in shoots or grass. It is almost a rule that these nests which are placed on the ground are poor in comparison with those which are situated in the branches. This is simply a matter of requirement.

Many of the Sparrows employ grass in the construction of their nests and I know several that rarely use anything else. Others, and more particularly the larger ones, use twigs, roots and other materials in combination, as I have found the nest of the Rose-breasted Grosbeak, though this species frequently constructs such a thin affair that the eggs may be seen and counted through the bottom of the nest. The Chipping Sparrow is a well known specialist in its use of the long hair from horse tails, and so well known in this habit that the little bird is called the Hair bird. This Sparrow makes its home near to the abode of man, and thus has the power to gratify its penchant for horse hair, and in all of my trips I have only met

with two nests without the lining of horse hair. These exceptions were lined with very fine rootlets, while the bulk of the nest was built as in other cases. The little bird sometimes makes quite long trips for the lining, and it is an interesting sight to watch one gather and transport a long hair. At times there are as many as seven hairs in the lining of a nest, but again but one or two. But whether there are two or a half dozen, the hairs are always nicely laid in layers about the sides and bottom, and are smoothed and arranged in a manner superior to anything that man could possibly do. Of course this habit of lining the nest with horse hair is an innovation in the bird's methods, for before the introduction of the horse on this continent the Chipping Sparrow depended on other materials. This species, as with nearly, if not all other birds is affected by civilization; and if we study the matter we shall find that civilization produces change in many ways on nearly all birds and mammals.

The Vireos are very interesting in nest construction and the Red-eye is the most pronounced in its predilection for presenting news in the form of bits torn from printed matter. It is not uncommon for the Red-eyed Vireo to attach torn bits of newspaper to the sides of its swaying pensile nest, and these fragments sometimes contain pertinent items of news.

The nests of the Crows and Blue Jays are bulky, compact structures, the latter being lined with fine roots nicely arranged in a smooth wall. That malign-ed creature, the Shrike or butcher as he is commonly called on account of its habits, which some have been greatly exaggerated, builds a warm and compact nest, lining the same with wool and feathers so that its early brood will not suffer from the cold.

The Chimney Swift constructs its nest entirely of twigs, of very even size as to length and diameter, and glues them

together and to the sides of the chimney, or boards when in a barn, which variation occasionally occurs, or to the interior of hollow trees as they formerly nested, and which is still rarely seen. This glue is supplied by the bird, it being secreted from a gland or glands just inside them out. It is very tenacious in its use as a cement and holds the structure in place with rare exceptions. This glutinous substance is said to be similar to the mucilaginous material secreted by the species known as the edible (bird's nest) Swallow, which is really a Swift, and not a Swallow, we are informed. This material secreted by the Chimney Swift, though small in quantity, is undoubtedly nutritious, but whether it is possessed of the delectable flavor that is found in that of the oriental species has not been determined by any observer in America, or at least not written of.

A little bird, the Prairie Horned Lark, well known to observers, but rarely seen by those who do not study our birds, builds a warm nest in the early spring. And well it may make an effort to keep its eggs warm, as the clutch is frequently deposited before the storms of early April have ceased, and not rarely the nest is surrounded by snow. The nest is composed of roots and grasses and warmly lined. This lining takes the form of wool when the nest is in a field near to a flock of sheep. Again the eggs are protected by a lining of fine weed stalks and hair. But notwithstanding the efforts of the birds, the nest was frequently found to be damp and cold. However, the eggs were warm, kept so by the steady application of the bird's incubating breast.

Among the starlings we find that the preference is for grass in the case of the Meadow Lark and some Orioles and Blackbirds. The Bronzed Grackle varies its nesting habit; generally building a structure resembling the Robin's, but often selecting the hollows in stumps

where more available, which makes the task of rearing the young less difficult. For birds are very thoughtful and are always ready to take advantage of benefits in the way of extra security for their breed. The Meadow Lark builds out in the field among the tussocks of grass, but generally constructs a canopy over the top of its home which helps to conceal the white, pink-spotted eggs. The Bobolink uses grasses and fine roots, and in my estimation conceals its nest more completely than does any other bird which builds on the ground, or near to it.

MORRIS GIBBS, M. D.
Kalamazoo, Mich.

To be continued.

Nests and Eggs.

Birds as a rule are quite constant to their choice of positions for their nests, and rarely change materially from selected sites. But this preference for a particular spot or situation is sometimes varied, and the changes are interesting to note, as it shows the range which a species may take in nesting. One Robin's nest was built in a corn crib; another on the girth of a barn. One nest was found on the top of a stump, two feet above the water of a millpond, and twenty feet or more from shore. Several Robin's nests have been found in hollows of stubs, and one in a side-tracked freight car; still another in a chimney. Several have been discovered on the ground, and one on the cut ends of old corn stalks. These few exceptions may show the wide range that one species may take.

A Chipping Sparrow's nest was taken from the side of a large straw stack, and one season I found a nest on a very peculiar situation. It was perhaps built by the same pair of birds, as it was only a few rods from the old straw stack, and was placed in the upper working gear of a self-binder, housed

in an old shed on the farm, and contained four eggs.

One Chickadee's nest, with eggs was placed on a cross piece in a woodshed nearly in the center of a populous village. This double departure from a standard was remarkable in this little bird.

A Great-crested Flycatcher built in the hollow end of a rail on a fence, and a Kingbird nested in a cavity of a stump, only three feet from the ground. A peculiar place for a Phœbe's nest was on the under side of the exposed parts of an overturned tree [not an unusual site in Western New York—Ed.] in a beech and maple woods. Another of the nests of this species was situated under the eaves after the manner of the Eave Swallow; still others were attached to the cavernous interior of a huge sycamore. Of course this last situation was a common one in an early day, but is now rarely seen since the Pewee has adopted the premises of man and selected the sheds and bridges for its nesting sites.

Eave Swallows, as they are now called, formerly built their nests attached to the faces of cliffs, yet now they are rarely found in such a position, and I may say that of all the birds known to me that the Eave Swallow is the most constant to one situation. A remarkable instance truly, where a species has changed its habit so radically. Barn Swallows are not nearly so constant, and sometimes vary their habit by building outside like the Eave or Cliff Swallows.

Chimney Swifts not rarely build in the gables of barns, and still occasionally in the huge hollows of the giant sycamores as they did before the advent of the white man. The Night-hawk, another insect feeder, has modified its habits, and occasionally nests on the gravelled roofs of the city stores. This custom was quite common for several seasons in Kalamazoo. The Wood-

peckers are quite constant, and I do not recall any variation excepting in the case of the common Flicker, which in time of necessity will resort to any cavity in stump or building.

The Warbler family is quite constant, and the only variation, and in no sense remarkable, was when a pair of Yellow Warblers built a nest in a currant bush in a garden far removed from the generally selected quarters, and only one foot from the ground. Neither do the vireos vary in situation to any degree, yet I have found the nests of both the Yellow-throated and Red-eyed at heights of from two to forty-five feet from the ground.

A Song Sparrow's nest fifteen feet up, and a Dickcissel's structure over twenty, are instances showing how generally low builders will take a rise. A Towhee has been known to build in a bush, and as this case, as well as the one with the Song Sparrow were late dates, it has occurred to me that the birds might have been robbed the first attempt, and so tried more elevated quarters for the second trial. When we consider that more than one third of the birds of America nest on the ground or just above it, it seems astonishing that the birds maintain their position as well as they do. It is not rare to find the structures of ground nesters built in bushes in the latter part of the nesting season, and I cannot but think that these variations are the result of disturbances in the earlier attempts at nesting.

In a suitable spot for Red-wing black-birds and where there was not an abundance of rushes, the birds built in a lot of cut brush and seemed contented. In new land the Bronzed Grackles adopt hollows in dead trees for nesting situations, and I have found scores of eggs in bare hollows as well as nests built in the hollows, and not a nest built in the regulation manner as usually seen with these birds. A Grass-

finch's nest interwoven with the tops of some vigorous red clover, and about a foot up was a curiosity to me.

Another ground-bird, the Spotted Sandpiper, distinguished itself by building on a log. A nest of a Ruffed Grouse was built upon a stump, while a Mourning Dove chose some roots beneath the margin of a gravelly bank. Doctor H. A. Atkins found a nest of a Sandhill Crane which was built on a support for hay in a marsh. A Mallard's nest containing eleven eggs was built in a hollow of a stub and ten feet up and out in a lake twelve feet from shore.

There is but slight variation in the situations chosen by the birds of prey, and of all that I have studied the only one which varies to any extent, is the Great Horned owl. This species nests in the hollows of trees about half the time, and again in the old nests of the Crow or Buzzard Hawk.

Some birds will accept almost any kind of a situation for a nest and the common House Wren will take possession of any cavity that suits its fancy. In that very artistic and correspondingly accurate book "With Nature and a Camera," there are several peculiar instances of odd situations of nests, together with most interesting illustrations. It appears that the Robin Red-breast of England, though a different species from ours is like it in its varied choice of nesting sites.

All birds protect their eggs and young from cold and wet, and I have observed the mother bird covering her brood during a storm. At these times the wings are spread out and the rain is kept off to the best of a bird's ability. However, it is very often a vain attempt and it must be recorded that Nature's act often proves more disastrous than the combined forces of man, together with the many other untoward effects. Storms are very destructive to bird life in the months of May, June and July, and especially so in June, when there

are so many young birds in the nests. Some birds, as the Woodpeckers, and others which wisely build in cavities, are practically free from wind and rain, and to an extent from cold; still, this habit does not seem to secure greater protection to the cavity builders in the long run, as the Woodpeckers do not hold their own any better than the Robin and some others which build exposed nests.

Not only is the effect of a long continued, or heavy rain very severe on the young; tens of thousands being drowned or chilled to death, but an almost equally destructive measure lies in the visitation of a severe wind. In these cases the birds hatched on the ground have a better chance for their lives than the species which are partial to tree habitations. Hawks and owls, and all other large birds are but little affected by the wind as they seem to be able to withstand the effects. But it is not so with many small birds, and many young and eggs are rolled from the nests in each severe wind storm. There are many birds which build but little better than platforms for their nests, and the eggs and young are often shaken from the nearly level structures. I could mention several species which meet with disaster from the wind, but will speak of but one. The small Green-crested Flycatcher constructs a very slightly hollowed nest, and in addition to this apparent lack in judgement, it also selects the extremities of long branches for the attachment of its house. It is not surprising that the eggs and young are made the sport of the winds.

[To be continued.]

Montana Magpies.

As several seasons have passed since I did anything in the way of collecting, it has not been my fortune to appear as a contributor to the columns of the

OOLOGIST in recent times. This season, however, finds me frequently afield in the wilds of central Montana, and though no rare species have added their treasures to my modest cabinet, a few notes concerning our common Montana birds may be of interest. We collectors generally make mistakes in with-holding our notes regarding common birds, thinking them of little value, and hence many facts upon migration, nesting dates, and other ornithological data, which might be available for another's use, never see the light. This article, therefore, does not aim to add largely to the body of information relative to the habits of so familiar a species as the American Magpie, *Pica pica hudsonica*, but rather to furnish data from from this region, where collectors seem to be few and far between.

Spring opened unusually early in this region, fully a month earlier than last season. Few traces of vernal vegetation were noticeable here in '99 before the middle of June; at the date of this writing, May 12th, spring has been reigning for several weeks, the trees and bushes are robed in green, and blossoms scent the air. Early in April the songs of Western Meadowlarks and Mountain Song Sparrows began to render the air vocal with melody, and it is needless to say that such attractions were too powerful to fail in drawing me afield.

My first set of Magpie's eggs was taken on April 21. Other nests contained incomplete sets, which were not disturbed, but as this set was found at the close of an afternoon's tiresome tramp, and a period of rainy weather was threatening, the eight eggs were transferred to my collecting box. The nests in this locality are all found in dry, bushy ravines or "coulees" opening upon the small water-courses. About a mile and a half from my home is a slaughter house, and within a half mile of this attractive center were from

eight to ten pairs of nesting Magpies. All the nests I have examined were in haw trees, with one exception, which was in a low willow.

The nest which furnished the set of eight eggs was exceptional in its unusual size. Its base was nine feet from the ground and was formed of a mass of stout twigs, within which was a basin-shaped layer of reddish clay, somewhat mingled with the twigs. The clay layer was about an inch in thickness. A foot ruler, placed over the clay basin, easily rested within the brim in any direction, showing an unusual measurement in Magpie nests, if it could be removed without destroying its form, would with difficulty be contained in a clothes basket of average size. In the clay basin was an inner nest, formed of coarse rootlets and a few horsehairs, the cavity being six inches across and two inches deep, remarkable in its shallowness. The inner portion of the Magpie's nest bears a general resemblance to the nest of the Brown Thrasher, and if placed alone in a hedge on a base of small twigs the similarity to the Brown Thrasher's nest would be striking. Extending upward on all sides from the twigs, around the clay basin was a loose lattice-work of twigs, and over the whole affair was a thick canopy of twigs. There was no noticeable opening for entrance or exit, though in several places the lattice-work was open enough to admit the owners. The space within the latticed sides of this nest was large enough to allow the bird to turn without injury to its long tail feathers, this being the only nest I have examined thus roomy. The nest was started in crotches, and extended to all available supports within a foot or two of it. One branch of the main stem ascended obliquely through the space enclosed by the lattice-work of the nest. Most of the eight eggs showed a trace of incubation. During the examination

of the nest the owners flew about in the adjacent trees, uttering harsh chattering cries.

On April 23rd, while prowling about in a drizzling rain, I found a Magpie's nest in a coulee within one hundred yards of the slaughter-house. One of the birds was on the nest, from which I could see her tail projecting between the latticed side as I drew near the structure. As I straightened up under the tree, she flew out with loud chatter, which she kept up while I remained near. There were only three eggs in this nest, so I left them undisturbed and made it a second visit on April 30, expecting to find eight or nine eggs, but found only six eggs in the complement, incubation begun. The base of this nest was seven feet from the ground, where it was placed among upright haw stems, having the usual basin of reddish clay worked among the basal twigs. The basin was nine inches from brim to brim. The inner nest was nearly seven inches across, and nearly four inches deep. This nest had a roundish opening on one side, not leading directly into the nest, but entering the thick lattice-work obliquely, and leading along the brim. Even by the use of this door, though, the bird would generally turn around upon the nest, as she was setting facing the door on both occasions when I approached. It does not appear that the birds use one opening regularly for entrance and an opposite one for exit, for in all instances where I have found regular openings, the same one was used for both entrance and exit.

The second complete set I found consisted of nine eggs, incubation well begun, April 25th. The base of this nest was ten and a half feet from the ground, in a haw ticket. The lower portion of the structure was unusually deep. This nest was also much narrower than other nests examined, the latticed sides rising almost upon the brim of the clay basin,

which was well mixed with the supporting twigs. No regular opening for entrance was noticed. The inner nest was made entirely of rootlets.

The third complete set, consisting of nine eggs, incubation begun, was taken on April 27th. The base of this nest was 10 feet from the ground. Like others described, it was in a haw tree, with thick canopy and loosely latticed sides. The inner part was seven inches in diameter and five inches deep, made of rootlets and horsehair, the foundation being made in the usual style of Magpie architecture. The female, presumably, was on the nest when I approached it, and remained until I started to climb to an old nest in an adjacent tree, when she flew out with a loud chatter. While I was examining the nest, the other bird, which I took for the male, alighted near the nest with a large grub or caterpillar in his bill; but seeing the situation, he gulped down the morsel and joined his protests to those of his mate.

In the same coulee, on the same afternoon, I found a nest containing seven eggs. Not being able to see the contents of this nest fully on account of its depth and the thickness of the surrounding sides, I mistook the number for a larger complement, and began to remove them. I took out three without mishap, but broke the fourth egg on a protruding thorn. It was quite fresh, and feeling the three eggs remaining, I concluded that the set was incomplete, and returned the three I had removed to the nest. I had some doubt as to the result, but visited the nest on May 2nd, finding the pair of Magpies in contented enjoyment of the six eggs, no more having been added to the seven originally found.

On April 27th, I also found an incomplete set of two eggs. Re-visiting the place on May 5th, I found only six eggs, incubation well begun. My son, who accompanied me on this expedition, was

entrusted with the care of this set; but in descending a juniper-carpeted slope, he slipped several feet, and three eggs survived the mishap. The set is mentioned to show the size of the complement. There was nothing unusual in the nest or its situation.

On May 8th, I took a set of seven eggs well advanced in incubation, from a low willow in a coulee frequented by cattle. The nest was within plain view of a bridge crossing the coulee, the base being ten feet from the ground. It was a well-built affair, though made in the prevailing style. This nest had two openings in the latticed sides, though not directly opposite, and the tail of the setting bird was not protruding from one as I approached, for it showed plainly at a place about midway between the openings. As she frequently alighted near with loud chatter while her home was being despoiled. I noticed that her tail was badly frayed along the sides. This set of eggs was the finest I had taken, being short and thick, having a greenish-gray ground, heavily blotched with dark markings, and brightly polished surfaces, the latter being lacking in other sets mentioned.

Re-visiting the first nest, mentioned under date of April 21st, I found a set of seven eggs on May 9th, incubation begun. I can not say whether these belonged to the pair which had first used the nest, but mention the fact of the nest's being occupied the second time, which I find not unusual. However, I have not found any instances of nests of the proceeding year being used by the Magpies.

It would be interesting in this connection to note characteristic traits in the behavior of the Magpies, but this article has already exceeded its intended length; and craving the obliging editor's pardon for taking such undue liberty, we leave the Magpies until another season.

P. M. SULLOWAY,
Lewiston, Mont.

Four Interesting Warblers.

BLACK AND WHITE WARBLER. *Mniotilta varia*:—I know of but two instances of this Warbler breeding in Livermore, both nests being found by the writer, one nest contained five eggs the other four. The first nest was situated at the edge of a woods in the dirt and roots of an uprooted tree, the other was in the deep woods, built in a rotten hemlock stump. The nests were composed of dead leaves and bark strips and lined with hair and hair-like roots. Eggs white, wreathed around the large end with chestnut and hazel. This bird is mentioned as a common breeder in this locality and is seen quite abundantly here, but I have been unable to find but two nests and have searched for them for years, so have come to the conclusion that it does not breed nearly so abundantly as

MYRTLE WARBLER. *Dendroica coronata*:—This Warbler has been found breeding quite abundantly in Livermore, by the writer and others in the month of May and June and first half of July. Its nest being built in a thick growth of small pines. I have never found them built in any other coniferous growth. The height from the ground ranges from five to fifteen feet. The nests were all built in upright branches, running out from the main body of the tree and were composed of fine hemlock twigs and dead grasses and lined with fine grass and a few hairs, have found several nests warmly lined with feathers of the Ruffed Grouse. The eggs in all of the nests that I have examined were four in number, never more or less, and in color were creamy white, spotted and speckled with brown and lilac and a few dots of black, thickest near the large end in the form of a wreath. This species although more common than the Black and White Warbler in this locality, is not nearly so abundant a breeder as

MAGNOLIA WARBLER. *Dendroica maculosa*:—This species has been found breeding abundantly in the coniferous growths of Livermore, nesting in spruce, fir and hemlock, at a height of from three to eight feet from the ground. In nearly all the nests I have examined the number of eggs were four, have found only one set of five, but in a few instances there was but three of the Warbler and one of that pest, the Cowbird. I sometimes think that the Cowbird throws out one of the Warbler's eggs, to make room for her own. The nest of this Warbler is composed of twigs of the hemlock, dead grass and weeds, and lined with black hair-like roots. The nest is loosely made. The eggs are white spotted and speckled with lilac, lavender and brownish black, thickest around the large end. The Magnolia Warbler, although a more abundant breeder than the Black and White or Myrtle, does not breed so abundantly in this locality as

CHESTNUT-SIDED WARBLER. *Dendroica pensylvanica*:—This little Warbler is a very common breeder in Livermore, nearly every bushy pasture contains nests of this species, built in low hazels and other bushes, from two to five feet above the ground, nests most abundantly in June, many nests are found that contain eggs of the Cowbird. The nest of this Warbler is composed of bark strips, dead grasses and plant-down and lined with fine dead grasses and horse hair. All nests I have examined were very loosely constructed, nearly all the nests contained four eggs never more, a few only three, color white, speckled and spotted with chestnut brownish and lilac, which forms a wreath around the large end the rest of the egg is sparingly dotted.

In concluding this paper will say if it is accepted by the Editor and readers of the OÖLOGIST, that in some future issue I will write my experience with four more interesting birds of this family: The Black-throated Green Warbler, Oven Bird, Maryland Yellowthroat and American Redstart.

GUY H. BRIGGS,
Livermore, Maine.

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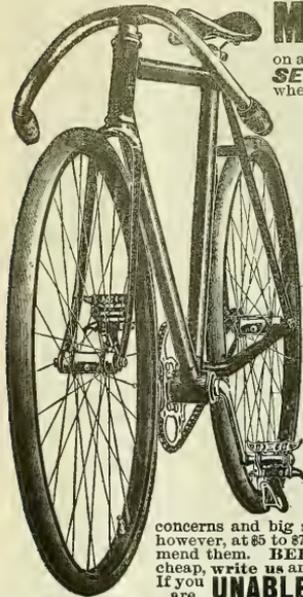
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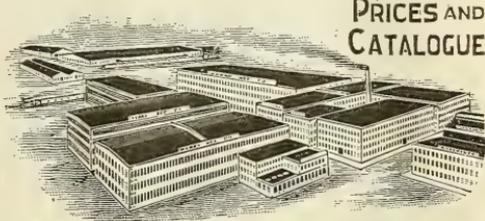


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THE OÖLOGIST.

VOL. XVII. NO. 7. ALBION, N. Y., JULY-AUGUST, 1900. WHOLE NO. 168

THE OÖLOGIST.

A Monthly Publication Devoted to

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TAXIDERMISTRY.

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Nests and Eggs.

All species of birds, so far as I am aware, are governed by their requirements in the line of timber for the nests, in selecting their nesting quarters. This is noticable in many cases. For instance, a few pairs of Eave Swallows built each season about half a mile

from a small pond. But in time the pond dried up, and the Swallows left the barn eaves and have never returned; for an Eave Swallow must have mud for its nest, and there is apparently nothing which will take its place. Some birds will make a shift in certain cases of necessity. Chimney Swifts, as a rule, use a regular sized twig for nest construction, but in an instance which came under my notice a pair had to make use of the very fine and irregular twigs from the raspberry vines or bushes. They make a peculiar looking nest, and the Swifts may have thought it odd, but they preferred this timber to travelling farther: Robins may build in any quarter where there is mud to be found, and the situations are various. It is not uncommon that in late April or early May there is a dry time in the land. Only lasting for a week or so, yet it is sufficient to stop the nest building of the Robins, and to keep them at a stand-still for the time being. I have seen a pair of Robins start a nest and the dry weather would come on and stop operations, and the pair would wait about for the rain so they could find the mortar. On one occasion we furnished mortar by letting the hydrant run on the ground. The delighted Robins immediately accepted the situation and gathered materials for the partially finished nest which was quickly completed, and the eggs duly deposited.

Many birds ornament their nests, evidently with design, for though the birds of a species usually follow a set style, it is nevertheless a principal of ornamentation. The Hummers are well known as dainty designers, and our little Ruby-throat is the maker of one of the most beautiful little structures in the world. Composed of deli-

cate cottony substances, and of the lightest materials possible, it is covered on the outside with delicate bits of lichens, which are caused to adhere to the little home by the use of spider's web. The Blue-gray Gnatcatcher constructs an equally well finished home, and though not considered equally fine with the Hummer's nest because of its larger size, is in reality fully as well made. The Wood Pewee also makes a finely covered nest of lichens. Another decorator in lichens is the Yellow-throated Vireo, which constructs its pensile nest at the end of a branch, and not on the upper side of the limb as with the Hummer and Gnatcatcher. These four species are the only ones which habitually cover the nests with lichens, but all of the Vireos of my acquaintance have the tendency to ornament the exterior with various substances, and the Red-eye in particular is given to this agreeable display of artistic taste. Very often the Red-eyed Vireo will attach pieces of printed newspaper to the sides of the nest, giving it a decidedly neat and peculiar appearance. The paper is not tacked on in great pieces, but is torn into fragments and gracefully draped about the nest. Very often the bits of paper contain words and even short sentences quite pertinent, and sometimes these finds are kept as curiosities.

Then there are some species of birds which are given to decorating their nests, that is in the eyes of outsiders, but who really follow the habit for other purposes. For instance, the ducks follow the practice of stripping the down from the breast and covering the eggs in the nest. It is not known why this brown down is used. Some theorizers claim that it is to keep the eggs warm during the absence of the parent, others say that it is for the purpose of concealing the eggs, while many think it answers a double purpose. The habit, common to all nest-

ing ducks, I am informed, is probably for the concealment of the eggs, for it is not reasonable to suppose that this is a necessity so far as keeping the eggs warm is concerned in a section as far south as the 42nd parallel, and yet the habit is followed in the United States as well as in Greenland. There are many points in the natural history of our birds which we have not as yet fully fathomed. In taking up the point of concealment, we find that there are many other species of birds besides the ducks that follow the practice of concealing the eggs when the nest is left alone. One class, the divers, is partially given to this habit of concealing the eggs when they are left, and no other bird more thoroughly conceals the eggs than does the common grebe of hell-diver, as it is called. Yet the Great northern diver, a very sly and sagacious bird, does not make any attempt to conceal its eggs. The grebe does not place down upon its eggs but simply pulls a mass of rubbish, moss and grass and dead reeds over the eggs when they are left, removing the covering when the nest is again returned to. The duck's eggs are probably covered with the down, even when the bird is on the nest; at least on the instant when the old bird leaves the nest the eggs are found to be fully covered. Once when I came close to a nest, and when the setter did not know of my presence, the eggs were found completely covered when the female hastily left. I have not yet learned of any of the perching birds which cover their eggs.

All birds have a system or arrangement in the deposition of the set of eggs in the nest, and there are very few species, if any, in which some peculiarity is not to be found if careful observation is made. Many birds so plainly and invariably show this tendency to a set arrangement that the habit is well known to all observers. It is of these

well known examples that we will speak. The Loon or Great northern diver always deposits two eggs of an almost perfectly elliptical shape, which lie side by side and at about three-fifths of the length of the trough-like depression from the front of the nest. From the position of the eggs an observer may tell the position of the bird on the nest, as the setter is long bodied and the abdomen is well back from a center. This arrangement is verified by watching the birds on the eggs. The turtle dove, nighthawk, and whip-poor-will each lay two egg which are placed side by side.

The Spotted Sandpiper and Killdeer plover, and I presume all of the shore birds, at least so far as I know, lay four eggs at a clutch, and arrange them in the nest or on the bare ground with their small ends together, and as they pyriform they join in to perfection. The eggs of all snipes and plovers are proportionately exceeding large compared to the size of the bird, and the saving of space by this arrangement undoubtedly answers a purpose. It is impossible to offer a solution to this problem of order, unless we suggest that it is a wise provision of a power which ordains the arrangement which best admits of the bird's covering the eggs thoroughly. It is fair to doubt if the sandpiper could cover her four large eggs if they were arranged in any other position. The shore birds are not provided with a plenty of fluffy feathers like the grouse and bob-white which lay many eggs at a clutch. If this arrangement of the set is broken and the eggs changed about, it will usually be found that the birds will rearrange the clutch, showing conclusively that the birds reason in regard to the position which will give the setter the best chance to cover the four eggs, I have disarranged the set, turning the smaller ends out, and have almost invariably found that the set would be rearranged in the course of a day.

Continued.

The Bartramian Sandpiper.

The Upland or Field Plover is known as the most elevated species of the family in its selection of nesting quarters. It is rare to note this bird in the sections selected by others of the snipes, sandpipers, and plovers, and it is very unusual to meet with it at any time along the lake shores or streams, as it prefers uplands and I have knowledge of its nesting on the highest land between Chicago and Detroit. Upland, therefore, applies well to the species, as it is often, nay, usually found nesting at quite a distance from a lake or stream. This habit is observable in the region of the Great Lakes, and it is said to be more noticeable in the west.

The names—snipe, sandpiper, plover and others applying to the shore birds, are quite often indiscriminately used for the same bird, and are used as the terms finch, linnnet and sparrow are for the small seed-eating birds. Still, there is a distinction among the shore-birds, and the name plover does not apply to this species, as it is not a plover in any sense; not belonging to that family. But usage is hard to combat, and this bird will always be known as a plover. In the west where creatures quite often receive unusual and startling names, this snipe is known as grass plover, prairie snipe, prairie pigeon, probably in allusion to some note resemblance, and at Manitoba is known commonly as 'Quaily.' The A. O. U. name, Bartramian Sandpiper is a good one; it was given in honor of the renowned Professor Bartram in the early part of this century.

The Field Plover arrives in Michigan in middle April or a little earlier, but is not seen in any numbers until after the 20th, of the month. Some morning, when we are out for snipe, provided you are an advocate of spring shooting, we may hear a peculiar note or series of twitterings. These are pleas-

ing to the ear, and the amateur cannot fail to notice them from their very oddity. The sounds at times, fall to us in the balmy spring air like the love song of the common tree toad, and on several occasions I have been deceived. On one occasion, long ago, I even went so far as to hitch my horse to the fence, and enter the field with my gun for the birds, only to find that I had been fooled by several musical tree toads. It is very easy to distinguish the notes if both creatures sing at once, as I have proven but this only makes it the more remarkable that a person can be deceived.

Besides this series of notes we often hear a pleasing warble, like *putt putt putt er-r-r-r-r putt er-r-r*, and looking up see a bird flying about apparently aimlessly, at a great height. Occasionally a long drawn *wee hee-u-u-u* is strained forth, and this last effort is probably its love song, as it is uttered in the spring when mating and the other notes are emitted at various seasons as well.

This species often flies at an immense height, and I have seen them fluttering when almost out of sight, and when their notes could scarcely be distinguished. The flight is very vigorous and rapid when the plover attempts it, but generally when undisturbed the movements are exceedingly varied. Sometimes the pair will sweep along at a great rate; flying low over the meadows. Then again the birds seem to flutter about in a very lazy manner, seeming to enjoy themselves in perfect abandon.

In some of their movements these plovers remind me of the actions of the sandhill crane. Sometime in May the pair makes selection of their summer home, and during the month deposit four pyriform eggs in a very shiftless inartistic nest on the ground, after the manner of most of the birds of this family. The structure is composed of a little grass and in situations far removed from water in most instance. The

eggs are speckled with brownish on a light buff, and are nearly always found with their smaller ends together for convenience of the setter.

Although the eggs are not concealed in any way, still it is a difficult matter to find them, even when one knows the part of the field in which the birds are nesting. The surest way to find the nest is to observe the movements of the birds. But even this is not always easy for the old bird is ever alert, and after you have seen the shy bird alight and disappear, you will frequently find that the sly creature will sneak from the nest through the grass when you approach the situation. When there are young on the ground the old birds will try the allurements of this kind of birds, and attempt to lead you from the situation by feigning lameness.

There are many species of birds in America which are not included in the arbitrary list called game birds, and yet are held in high esteem by the shooting fraternity. It is hardly fair to give the woodcock and jack snipe a higher position in the scale of the gunner's estimation simply because they lie well to the dog, while many others of this and other families will not do so. The list of game birds, as well as fishes is simply an arbitrary one, and we are at liberty to make a list to suit the fancy of each hunter.

The Field Plover, according to my observation of more than a quarter of a century, is one of the most alert and wary snipes that we have; and anyone who proves himself capable of stalking the birds in their selected quarters, gives evidence of possessing the prowess of an educated nimrod. Because of its scarcity, and as well from its elusive ways, it is but little, or not at all known to the gunner who habitually hunts with a dog, for that class of men rarely comes in contact with it, as we know that the gunner who hunts with a dog are not generally shooters. Nevertheless; there

is as much skill required to successfully hunt the Bartramian Sandpiper successfully as was ever required to take the snipe, bob white or woodcock. Yes—and far more, for the patience required is out of all proportion to the chances of a decent-sized bag.

September is the best month to hunt this lively bird, although in many quarters where unprotected, the birds are gathered in in August, and even in July and when the immatures are often too young to fully care for themselves. The Upland Plover is found over a wide range of country and has been found breeding from the East to Alaska. It is rare west of the Rockies, and is becoming scarce in the east, where a gunner thinks himself in good luck if he bags two or three on a trip. I have hunted this bird in Massachusetts, Michigan and Illinois, and have found it the same elusive, active bird in all sections. Where it is hunted in the East with decoys it is not a grand success, and while there are about a score of other shorebirds, large and small, which are lured, this plover is not commonly called in on account of its shrewdness and penetration.

Such a thing as a potshot is not known and the chances are even against getting a good single, for the birds are scary and rarely give a better show than at fifty yards. Adding to this that they are vigorous flyers and are capable of carrying off a good sized load apparently, and it will be seen that the Upland Plover or snipe is a difficult bird to capture.

As a table bird, there are none better, and the delicacy of a bird of the season shot in the autumn is equal to that of anything placed before the banqueter. But let me add, that they should never be hunted in the spring, both from the fact that they lack the layer of fat which adds so largely to the flavor, and as well, it is not consistent to shoot in the spring under any conditions

MORRIS GIBBS, M. D.,
Kalamazoo, Mich.

A Story of My Life;

By *Chondestes grammacus strigatus*.

WM. L. ATKINSON, SANTA CLARA, CAL.

In the following story I shall endeavor to record a true history of my life which has been one of trials and tribulations as I think one will admit after having read it.

My true name is *Chondestes grammacus strigatus* but I am perhaps better known to the inhabitants of this large world as Western Lark Sparrow. I first saw the light of day in a nest on the ground in a large meadow in that beautiful country of California where I was hatched and reared with a brother and two sisters. Those were indeed happy days! My father sitting on a small bush near our home would favor us with many beautiful songs while my mother fed us with the grain, worms and insects which made up our usual meal.

When we were able to fly and to partly look after our own well being a happy party we were, flitting around through the hedges and meadows adjacent to our home, our ever watchful parents warning us of approaching enemies in time for us to make our escape. Here, however, my first great calamity befell me. One day we were all feeding along a roadside when a boy with a long destroyer which made a great noise killed my father, brother and sisters, and injured my mother so severely that she could not fly and was captured and killed by a dog. I was also wounded, being shot in the leg, and although I escaped and soon recovered sufficiently to walk, I have never regained full use of that leg.

After the loss of my family I was very lonesome and wished a great many times that I had been destroyed with them. However, I soon fell in with a family party of relatives, *Spizella socialis*, and when I had told them my troubles they invited me to join them,

which I very gladly did. A short time after I joined them it began to grow cold so we all decided to leave our present abiding places and go in search of a warmer clime. We traveled many days in a southerly direction, over broad rivers, green fields and large forests, until we at length arrived in a beautiful country of large orange groves where the air was ever warm and pleasant. As there was a great variety of food here, we decided to remain for an indefinite period. At this time I had a dispute with one of the sons of Mr. *Spizella socialis* and as the whole family took sides with him I decided to leave them.

After I left their company I wandered around, meeting many of my relatives, but was not content to abide long with any of them until I met a gentleman who bore the same name that I did and who informed me that he was my uncle. He was very glad to see me and invited me to join his family, which consisted of his wife, one son and two daughters. His daughters were very beautiful, the younger one especially, and I immediately fell in love with her. The days passed very pleasantly now and very rapidly also.

I had but one serious adventure, of which time I narrowly escaped being caught and devoured by a cat. The time was now approaching when I felt inclined to return to my old home, and as I disliked to travel alone, I asked and received permission of my uncle to take his youngest daughter with me.

We were duly married, and after receiving some good advice from the old folks, set out upon our journey. I was so happy I could not refrain from singing nearly all the time, and my wife was good enough to tell me that I sang very well, almost as well, in fact as her father. This made me feel quite flattered; for her father was a vocalist of repute. After traveling leisurely northward for a time we came

to a beautiful valley which was covered with fruit trees, at this time in full bloom, and their fragrant and beautiful blossoms made one think of Paradise. I was told that one of these orchards was owned by a friend of the birds, called an Ornithologist, so we travelled until we found it. In this orchard many birds were nesting, and as they told me he never allowed their nests to be disturbed, we decided to remain here and build our summer home. The only difficulty was that there were no bunches of grass growing in the orchard and the traditions of our family tell us that we should always build our nest on the ground under a bunch of grass or weed.

However, we decided at last to build in the first forks of a large prune tree about one foot and a half above the ground, and so began building our home on the 16th of April, 1899, of twigs, straw and rootlets. The interior we lined with soft fine grass and hair. By working hard we had our nest ready for the eggs nine days after we started it, and five days later found my mate sitting upon five beautiful eggs, four of which were hatched twelve days later, or upon the 8th of May. My happiness was then complete, but it was soon to be turned to sorrow, for when our babies were but two days old two terrible dogs tore down our home and devoured them, although we tried in every manner possible to prevent them from doing so.

After we had somewhat recovered from the shock occasioned by this terrible loss we decided to build again, this time selecting a fork in a prune tree two and one-half feet up, in which we built our nest and which in due time held three eggs, they being hatched upon the 5th day of June. We thought we had placed our home high enough up in the tree to be secure, but in this we were mistaken, for upon the 8th of June, our home was destroyed

and our babies devoured by the same arch-criminals who had murdered our other family. After this last sad experience, my mate became sick and never rallied, dying of a broken heart ten days after her babies were destroyed. Soon after her death, I left the scene of my many troubles for the beautiful southland, where I am at this time wandering around in a state of loneliness bordering upon despair, and waiting the welcome time when I shall join my wife and family in our future home.

Hawk Notes—Oological—1899.

MARSH HAWK. May 19th was the day I had appointed for exploring a marsh where I expected to find nests of the above named species. After some time I finally flushed a female Hawk off her nest, out of a clump of small willows where the water was several inches deep. The nest contained only two eggs, desiring full and complete sets only, I moved on, as a full clutch generally contains five eggs and an egg being deposited every alternate day. I calculated the set would be complete about the 25th. My time being limited I soon turned homeward without any further find of interest.

Next day, this being the 20th, I set out in another direction for sets of the same species, found a nest on a piece of wild rough upland right in a clump of small willows, but this contained only one egg. Again I made a hasty calculation and set the day to return on the 27th. Making a few notes in my book, I moved on, found a nest of Cooper's Hawk, but that will come under its own heading.

Well on the 25th according to figuration I visited nest No. 1 and found Madam Hawk at home. After coming within five yards of the nest she flew up revealing five bluish-white eggs, no markings whatever upon them. Nest situated in several inches of water sur-

rounded with small willow bushes. Composed of sticks coarse weed stalks, brier stems, etc. on top of which was a quantity of grass. Nest measured 16 inches across with a depression of 2½ inches.

The 27th following was the day set for collecting set No. 2, but something unexpectedly turned up and I was delayed until the 30th. On which day I might have been seen making tracks for the Hawk's nest.

When I came to within ten rods of the nest, the male came to meet me circling and crying overhead. As I drew nearer he would now and then swoop down at me with loud cries as if to drive me away. The female soon flew off the nest, I suppose she knew by his cries of alarm that something awful was coming. She now joined her mate and the two came at me with renewed force, they would swoop and dive unpleasantly close to my head while I was examining the nest.

This also held five eggs; hastily packing them securely and taking all necessary notes I took my departure as quick as possible. This nest was constructed of brier and weed stalks, coarse grass and roots, on top of which was an abundance of dry grass. In color the eggs are white with a tinge of blue and very faintly marked with light brown spots and stripes detected only on close examination.

The eggs of this species have frequently been described, with markings of different colors upon them. I have collected in this region for the last six or seven years and have examined upwards of a dozen sets from this locality and the last described set is the only one, that was marked in any way, and that is very faint. From four to six eggs is the complement, five, however, is the general rule, while four or six are only occasional.

333 COOPER'S HAWK. On May 20th after finding the second nest of the

Marsh Hawk, I soon entered a medium sized grove of about sixty acres. As I was wandering aimlessly about not caring particularly where I went I soon found myself confronted by a barbed-wire fence, looking up suddenly I got a faint glimpse of a dark object in the tree tops not far away. Stepping over the fence, I hurried rapidly on in that direction until I could see the nest plainly. At first I thought it was an old Crow's nest, but it looked suspicious. All this time I was looking up, but could see nothing on the nest in the form of a bird. I'll just go round to the other side I thought. There was considerable undergrowth about the tree on this side, so I made a small circuit and on coming up on the opposite side I saw what appeared to be a gray tail protruding over the nest and knew instantly I had found something of more interest than a Crow's nest. Going up to the tree as there was no brush on this side I rapped on the trunk with a stick I had picked up for that purpose immediately a Hawk of some species rose off the nest and sailed away. I being under the branches could not see the bird very distinctly so was unable to name it.

Not knowing what species it was I resolved to await her return, so going a little ways off I sat down on the ground. I had not long to wait, however, before she was circling over the tree-tops. Her keen eyes must have observed me, although I sat perfectly quiet, for she did not alight on the nest, but came very close. Being satisfied that the bird was Cooper's Hawk. I arose and went to the tree, as the nest was only thirty feet from the ground I was soon looking in it. When I saw its four white eggs with a faint tinge of blue there was left no doubt as to the identity.

Being in a very uncomfortable position I soon descended bringing the four freshly laid eggs with me. Following

is a description of the nest as then taken. Outside and general appearance as a Crow's nest, situated in the main fork of a black oak tree, thirty feet from the ground.

Composed of medium sized sticks externally, over which were placed finer ones, bark, grass, leaves, etc. Two eggs have very faint markings of light brown upon them, not hardly noticeable.

337 RED-TAILED HAWK. Of this species two sets were collected. The first nest being placed in the topmost branches of a burr oak tree, which showed little or no attempt at concealment and was probable the accumulation of many years.

From March 22nd to the 30th the Red-tails were seen repairing the old nest. So on April 3rd a party consisting of a neighbor, my two brothers and myself set out after "big game" as one of the party termed it. After a pleasant walk in the fresh morning air we arrived on the field of action.

The nest was easily seen at a distance of half a mile as the nest tree was one of the outermost ones, but we did not see any Hawks near. When we came up to the nest we first realized its dizzy height and the dangerous position it was placed in, for the top of the tree was greatly inclined.

After some discussion I was finally elected to do the climbing and the contents of the nest were to be mine for the undertaking (that is if the nest contained any eggs.) At first I hesitated but as the morning was fair and there was no wind I thought I might possibly make it, so at length said, "I'll try." The climb was long and tedious but was accomplished nevertheless and now! There was my reward, two eggs!

The nest was a huge structure and very old without a doubt. Outside measurements were 14 inches deep and two feet four inches in diameter. In-

side three and one-half inches deep by nine inches in diameter. Composed of very coarse sticks, weeds, etc. On top of which was a quantity of inner bark of trees and a corn husk.

The eggs were warm as incubation was commenced, although the old birds were not around at the time, but were seen at the nest later on. After lowering the line I made my descent as quick as possible and measured the same which proved to be forty-five feet, and the place where it came down eighteen feet from the base or trunk of the tree. So you will understand that the tree was much inclined, having few limbs the climb was very dangerous. The eggs were ordinarily marked and incubation commenced but the cause of the birds' absence was not determined.

On April 29th as I was prospecting for Owls and Hawks nests in the same piece of timber as the above I discovered another nest of this species which happened as follows. I had climbed a giant oak to the height of about fifty feet to where there was an old cavity, when I saw towering up in the distance a huge nest which was in the highest tree around and easily seen above all the others. After walking in that direction I finally saw the female rise off the nest and fly away soon to be seen circling around with her mate overhead.

This nest was placed in the very top-most limbs of a "black-oak" or "pin-oak" and elevated to the height of some fifty odd feet. Slow, but sure I made my way up, now and then a dry and decayed limb would snap off under my feet and send a thrill through my body. Although it was a still day every little breeze would make the tree sway terribly I thought. At length I came up to the nest, or rather up under the nest, for I could get no further. I now had a fine view of the surrounding forest tree tops.

Holding on with one hand under the

nest and with the other I reached out over and onto the nest and found it contained three eggs. Putting one egg in each of my vest pockets and surveying the nest carefully, noticing the materials, etc. I started downward. When my feet once more struck the solid earth beneath I rejoiced. Then carefully taking the three eggs from as many pockets I laid them on the ground all safe, a beautifully marked set. In color they are a greyish-white minutely speckled all over with light brown and lilac, while over the whole are again large blotches of rich brown and lilac. The marking of the two are confined to the smaller end, while the third is uniformly marked. Incubation in this set was quite far advanced.

This being without a doubt the same pair as the first set of eggs was taken from for it was in the immediate vicinity of the first nest, and their second attempt at nidification.

This nest, however, was newly built and constructed almost entirely of poplar sticks, on top of which was spread a quantity of bark strips, moss, leaves, etc. Having only one hand to work with I could not measure the nest.

I am satisfied with the statement made above, that the nest was newly built, for the ground at the base of the tree was thickly covered with sticks, which dropped from the lofty site at the commencement of the nest.

343 BROAD-WINGED HAWK.—From the above described Red-tails nest, I now struck out toward the setting sun, finally I came to a ravine in the woods, crossing this stretch of land covered with brush and second growths, all the large trees having been cut into cord wood a few years previous. I still keep my course westerly. Now and again I would stop and watch the squirrels and emigrating birds. Suddenly I thought of the distance I was from home and that I was getting further away every

minute, the sun having already set. So I turned about and started homeward in a northeastern direction. I now recrossed the ravine, but at its northern end where it was narrow and sparingly covered with brush and second growths.

Directly opposite the ravine from where I started to cross it, was a large oak, about a rod back from where the big trees were again growing. As the tree was in my direct course I passed within a few feet from it. When I stopped to look up and admire its beauty. I indistinctly saw in the main fork a nest of sticks. Immediately I made preparations for ascending, and as I did so a Hawk flew therefrom and into the fast approaching dusk. The nest was not very high so it did not take me long to come up to a level with it. It contained two eggs which were new to me, these were a light blue and covered on the larger end with blotches of rich brown. In size somewhat larger than the eggs of either the Marsh or Cooper's Hawks while decidedly smaller than those of the Red-tailed or Swainson's Hawks. As it was an incomplete set I decided to leave them for several days for completion.

Making my way downward and gathering my effects I groped my way through the woods in a homeward direction. The sky was clouded over and a storm threatening. After clearing the woods my progress was both rapid and easier and I was soon at home, just in time for supper. After heartily partaking of the same I consulted the authorities, such as were at my command, and placed it as probably the Broad-winged Hawk.

Several days later, on May 4th, to be correct, I slipped away from my work for a brief visit to the Hawk's nest. As I found nothing on my way in the Raptorial line I will not stop to describe the tramping to the "New Nest." Suffice to say the day was exceedingly warm for that early date and that I was

quite exhausted at my arrival at "Hawksville" as I often of late called this particular grove, which seemed quite well supplied with various species of Hawks.

After coming within sight of the nest I saw it was occupied by Madam Hawk. Accordingly I rapped on the tree with a stick, but she refused to leave and only did so after repeated loud rappings, when she slid from the nest and flew across the ravine and with a graceful upward curve alighted among the branches on the opposite side. I was now satisfied that the species was as I had before placed it, Broad-winged Hawk.

The nest now held four eggs, a beautiful set, in fact the prettiest Hawk's eggs I have ever seen. They are white with a bluish tinge, with small brown spots all over them. Three are beautifully splashed at the large end, while the fourth is sparingly marked at the smaller end with delicate brown or light chocolate. The egg with the markings on the smaller end was the last laid, as the bluish color is perfect while the others are bleached out in various stages, which is often the case with incubation from fresh to advanced.

The nest was constructed of coarse sticks, bark, etc., on top of which was spread a quantity of fine ones and stripes of bark. Diameter on top 20 inches which tapered down to a few inches at the bottom according to the crotch in all 15 inches deep with a depression of two inches. Situated in the main fork of an oak tree right next to the trunk and 31 feet from the ground.

After making a small tour about the grove I returned to this nest to find the Hawks there, where with the best opportunity I fully identified the species to my entire satisfaction.

EDW. W. SPRINGER,
Owatonna, Minn.

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VOL. XVII. NO. 8. ALBION, N. Y., SEPT.-OCT., 1900. WHOLE No. 169

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THE OÖLOGIST.

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OÖLOGY, ORNITHOLOGY AND
TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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FRANK H. LATTIN,
Albion, Orleans Co., N. Y.

rather solitary in their nidification, has not felt his nerves tingle with responsive sympathy, as he read the account of the visit of some fellow collector to the island home of the gregarious sea birds, and has not longed for the time to come when he too might realize this novel experience.

This then was my experience when with my Company I came to Aguadilla to relieve H Co. Standing on the west shore of Porto Rico, in front of this little town one allows his gaze to wander across the expanse of rippling waves where twenty miles away in the usually lazy atmosphere indistinctly rise the rugged outlines of a rocky islet. This is DeCicheo.

Enquiries regarding this island revealed that it was uninhabited by man, save by transient fishing parties, and that it was the home of myriad water fowl. Eagerly peering through a rather unreliable telescope, the property of one of the Co. members, went far to confirm the latter part of this information, revealing a maze of birds winding and circling in the haze with which the island was enveloped. Thus it may be easily imagined that from an indefinite wish there came to be gradually maturing plans in my mind for an invasion of this ornithological paradise. From the beginning it seemed that in developing these plans I constantly encountered obstacles, but passing over these after much persistent effort, on the evening of June 23d, at 10:30 I found myself seated in the stern of a staunch little twenty-foot one-master, and tiller in hand I guided the small craft away into the uncertain gloom that the twinkling stars did little to relieve, the two

A Day on De Cicheo Island.

BY B. S. BOWDISH.

What collector, whose observation has been more less confined to birds

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boatmen bending to their oars for the breeze did not even stir the idly flapping sail. It was probably some hours later when a faint breeze stiffening the sail, one of the natives relieving me at the tiller, I stretched myself in the baggage in the boat's bottom and from thoughts of the morrow's prospects, my mind glided away into that shadow land where it is no surprise to take eggs of the Great Auk from Robins' nests.

Once during the night I heard the cry of the islands first herald, presumably a Laughing Gull, but little roused from slumbers was I until the grey of night's last hours was resolving itself into the light of dawn. Clear cut and rugged, the object of the trip met my gaze, but still some distance away, and now indeed its inhabitants were sending out messages in plenty. Occasionally, on easy, graceful wing the Frigate Bird, (*Fregatta aquilla*) soared aloft while, silver white, a Gull or Tern dashed lightly above the waves, too far away to be recognized, but the most frequent form, and one which at a distance suggested a rather heavy, clumsy duck, was the Common Booby (*Sula sula*). These birds often flew low over the boat, craning their necks and staring down at us as though questioning the cause of our invasion. Passing to the north of the island we continued to the west coast where, in a little cove we dropped anchor. At the back of this cove a slight hollow under the rocks formed the camping place of a party of three native fishermen from Mayaguey, and here too we established our base of operations. On ledges of rock directly above this camp site, and all along the coast the Noddy Terns, (*anons stolidons*) were breeding in numbers.

The island may possibly be two miles across in its widest place. In places the rocky walls rise direct from the water, in others fringed by a narrow

beach, and they rise to a height of ten to fifty or sixty feet, from their summits the slopes stretching up to fairly lofty pinnacles and densely grown with an impenetrable jungle of bush and vine, while fringing this and liberally sprinkling the rocks are many cactus, of whose presence the over-eager collector becomes painfully aware.

I regretted greatly not having a camera that I might have depicted some of the scenes of bird-life. Nearly all of the birds are remarkably fearless, as the denizens of these islands are usually described, it would be hard to find more willing sitters than many of these birds would have proved.

Unquestionably the most abundant bird of the island was the Common Booby. Unfortunately I was late (or in the wrong time) for eggs of this species. In one case I saw a young not over half grown Booby, and from this there was every stage of size and plumage up to young strong on the wing.

One of my natives volunteered the information that these birds breed on the beach, laying on the open sand, and that the eggs are bluish in color. Of the birds of this part of the world it is hard to say what is a late date for nesting since there seems more or less continuity and irregularity. For instance I have found eggs of *Cuthia bicolor* almost every month in the year.

I found, too, that I was late or out of season for the Frigate birds, one of the specimens I brought back being an apparently full-grown young male, but whose plumage was very undeveloped, head and much of plumage white, bill and feet blue, and tail square, having as yet not developed the fork. These birds were fairly plentiful and one or more could be seen at any time sailing within easy gun-shot often nervously closing and opening the forks of the tail.

Another bird, six or seven specimens of which, I had a glimpse of, I shall

not speak of now. The identification is hazy as yet. Later I may be able to add a note relative to it.

The Laughing Gull I noted singly and in twos and threes but no evidence of their breeding here. What I regarded as strange was that I did not see a single Pelican.

The Sooty Tern did the best for me in the way of eggs and the majority of these were badly incubated. I collected thirty-four sets of one each and could have taken many more.

I also collected one recently hatched young, and at least one pair of birds in the ledges over our camp were feeding young apparently full grown. The nesting sites were ledges or shelves in the face of the rocky walls, ranging between ten and forty feet above the beach. Some were narrow and others wide. In one case the egg was laid underneath a cactus plant on top of the rocks. In some instances there seemed to be a slight gathering of rock chips and small pebbles about the eggs in the form of a ring, and in a very few one or two bits of twigs were added, but otherwise there was no nesting material and often the egg laid on the bare rock. In coloration the series that I took show considerable variation, the ground tint ranging from whitish through pinkish, to decided buffy tint, and the markings, chestnut and lavender shell marks, ranging from few scattered dots to quite thickly marked, some specimens having well defined wreaths of small dots about the large end and one a single blotch, besides a few other marks, which measures 0.95 in diameter. I give below measurements of extremes and of eggs selected at random: 2.16x1.37, 2.11x1.35, 2.02x1.41, 2.07x1.42, 2.06x1.38, 1.99x1.46, 2.06x1.49.

The Noddy Tern sits closely (as may be instanced by my native reaching over the edge of a ledge and catching my first one in his hand), and when driven

from their egg quickly return, if permitted. Occasionally one bird is found nesting on some isolated ledge but usually at least three or four in close proximity and sometimes seven or eight, according to the facilities of the site. When disturbed they dart from the ledge and close together they dart swallow-like about the intruder's head uttering angry cries. Their notes at this time and while feeding young are scarcely distinguishable from the hungry mutterings of young crows.

The only other bird of which I secured eggs was the Bridled Tern (*Sterna anaethetus*). These birds are nothing like as common as the Noddy.

I think it doubtful if fifty pairs of birds were breeding on the entire island. They are also, I should judge, later in their breeding, the only three nesting sites which I found occupied containing a single egg in which incubation was only just commenced. Also I noted birds showing strong anxiety regarding certain nooks under the rocks, quite similar to those where eggs were found, and I have no doubt that these were nesting sites selected but not yet laid in. In one such case the native caught the male bird on the nest, or at least in the nook.

The first egg was found in a slightly hollowed spot on a flat rock and arched over by a small rock. No pretense at nesting material whatever. The second was in a sort of pocket in the face of the cliff at about 40 feet above beach. The third was under an overhanging rock about ten feet above beach. From the small amount of data I should judge that the birds almost always select rather hidden and covered sites and from this fact and the further one that they do not sit nearly so close as the Noddy, their nests are not so easily found, the Noddy Tern being usually easily seen in its nesting ledge, whereas the Bridled leaves its nesting site with a dash often before you see it.

The three eggs show quite a little variation and are markedly different from those of the Noddy. They are quite bluish in ground tint, the first one thickly sprinkled with cinnamon specks, the second much less liberally marked with large dots and the third with less and still larger markings. They measure as follows: 1.74x1.27, 1.80x1.23, 1.80x1.36. The birds like the Sooty dart about one's head with angry cries, the latter distinct from those of their relatives being quite like the high pitched enquiring note the crow sometimes utters in fall and early winter.

I lacked time to investigate as to land birds but noted one Mourning Dove and was quite sure I heard the notes of *Vireo calidris* and also of *Margarops fuscatus*. That evening as we sat about the little camp fire sipping the coffee, which only the Porto Ricans know how to make, I felt as though I would gladly have put in a month in this favored spot. At about 8 p. m. we went aboard but the wind was so strong that the natives were unwilling to hoist sail. Finally, after vain waiting until midnight, during which time I slept, they pulled up the anchor and leaped to the oars, and it took a half hour's hard pulling to take us off the rocks sufficiently to set sail. In a few minutes I was again slumbering, and during the larger part of the trip I continued to doze unmindful of the boat tossing like a cork on the waves, or the sheets of spray which were drenching me. It was 1:30 p. m. the next day when we again reached Aguadilla, and notwithstanding the fact that I was not overlaid with specimens, still I felt well repaid for my trip and a bright spot in my memory will long be occupied by the wild little island of DeCicheo and its feathered denizens.

NOTE.—Since writing the above it appears highly probable that had there been opportunity for thorough work at least two and perhaps more species of

Booby would have been developed, also that the Dove may have been the Zenaida.

Nests and Eggs.

Perhaps no bird in America, certainly no bird in the Great Lake Region, equals the common Bob-white or quail in the number of eggs it sets upon. This bird not infrequently lays eighteen eggs, and even more are found in one nest, but I can assure the readers that with any other shaped eggs the Bob-white could never succeed as a successful setter. I will suggest that my friends with the specimens at hand, compare a set of twenty eggs of this species with an equal number of the same size in longer and shorter diameter in any other bird, and note which lot occupies the smaller space. We may say for illustration, that the egg of the quail is triangular shaped, and fits in as no other egg can.

With all birds that lay a good sized set, so far as my observations go, the eggs are deposited in an exact circular shaped group. The bird must use reason in thus arranging them, for it is only by this order that they can all be properly covered. Not infrequently when a grouse is startled from her nest she tumbles one of her treasures from the hollow. If the egg is not too far removed from the nest it will be found returned to the nest within a day.

I have been informed that the Brown Pelicans, which nest in vast colonies, steal eggs from one another's nests in order to fill their complements, or at least take possession of those they find on the ground and roll them into their nests. Although this does not seem likely, I cannot dispute it, and moreover there were strong proofs that such was the case in many of the nests that I examined in Florida. These nests which were always near together, contained four eggs, never more; one to three of

which were ready to hatch, while the remainder were fresh or nearly so. And again there would be eggs in the same nest with young over a week old, or young ones varying a week or ten days in age. This pelican has not the conterminous habit, at least as a rule, for we found many nests with three and four perfectly fresh eggs in them. One point is evident, if the charge of thievery is proven, and it is that the old birds know their limit as to number of eggs, for not in a single instance were more than four eggs or young, or both, found in one nest.

When the young birds emerge from the eggs, the old birds carry the useless shells away, and it is rare to find any portions nearer than ten feet from the nest. The Robin and most of the other small birds simply fly with the shell and let it fall, but some species, as the shore birds will carry the bits of shell about for some time, and the Spotted Sandpiper has been seen to carry the shells to the water and immerse the pieces.

Some species of our feathered friends conceal their nests most effectually in holes and out-of-the-way places; others build their nests in plain sight but rely on deception of appearance, as the Hummer and Gnatcatcher; and still others rely solely on the protection afforded by the markings and color of the eggs. The shore birds and terns and gulls rely entirely upon the protective coloration of their spotted eggs. I have often hunted in vain for the nest of the Spotted Sandpiper, Killdeer and Field Plover, when I knew that their eggs were lying in plain sight and probably quite near to me. The Killdeer never builds a nest to my knowledge, but deposits its eggs on the ground, generally selecting a spot in the field or lake front where there is a plentiful supply of gravel, which makes it very difficult to discover the speckled eggs. At times the old birds arrange the small pebbles

about the four eggs, and if this gravel is disarranged it will be found to be placed in position again by the following day.

In the deposition of their eggs the birds differ vastly as to time required. The Great Northern Diver lays its two eggs two or three days apart, and many of the larger birds skip a day. This may be considered as a rule; that those birds which lay a good many eggs at a clutch are in the habit of depositing an egg a day during the period of deposition, while the birds which lay but a few eggs are more apt to have longer periods between the additions. The two cuckoos, Black-billed and Yellow-billed, which usually deposits two or three, sometimes four eggs, often have periods of three days between the eggs, and always as much as two full days. The small birds are all credited with laying the eggs in the order of one a day, and some have beaten this record to a marked degree in the depositing of a set of four or five. Once in the case of a Phoebe, the five eggs were laid in four days, and a Chipping Sparrow laid its four eggs in much under four days. The buzzard hawks deposit an egg every two days, while the Sparrow and Cooper's hawks lay oftener. Great-horned owls have a period of two days between the depositing of the first and second eggs, and as the eggs are generally laid in cold weather, the old bird begins setting as soon as the first egg is laid. From this it results that the young are hatched at two days apart and this difference in size is noticeable until the birds leave the nest. The Rails lay an egg every day, as do also the Woodpeckers.

Do birds carry their eggs and young? Some species certainly do, and have been recorded in the act. I have never seen this method of removal, but fully trust in the observations of my friends. An observer in whom I have confidence tells me that he has seen the old Wood-

cock fly with one of her young firmly grasped between her legs. It is a common thing to find that a brood of young Woodcock has been removed from a locality over night. Other birds also carry their young, and in various ways. The Wood Duck must transport her downy nestlings to the water from the hollow in the tree where they are hatched, for the delicate creatures could not drop from the height. Some maintain that the young are carried on the back, and others say that the old birds grasps the nestling in her beak. The only case of a birds' carrying its young that I have met with, was in the Great northern diver, which I watched as she swam away with her two young on her broad back. A friend of mine whom I consider truthful, claims that he has seen the old Loon flying from one lake to another with her young on her back; and this does not seem unreasonable after I have seen the bird transporting her brood in the water. Capable writers who have witnessed the act say that it is a common thing for Auks to hold on to their single egg when frightened from the cliff where setting, and to let the eggs fall in the sea as they fly. The bird evidently holds the egg between its legs as it rests on the rocky perch, and in being suddenly startled from its position holds to the egg, forgetting to release it, or perhaps attempts to carry the egg as a matter of fancied security. Observers have recorded the act of the Oyster-catcher in carrying its eggs, and in successively removing them to a place of safety.

But it remains for the wide mouthed Goatsuckers to receive full credit for the remarkable habit of carrying their eggs in the mouth. No less an authority than Audubon claims that the Whip-poor-will at times carries its eggs in its mouth. I have never witnessed the act, nor have I met with anyone who has seen the bird carry an egg in its

cavernous mouth. Still I believe that it is done, and I feel confident that the Nighthawk and Whip-poor-will are both given to transporting their eggs from one place to another. The Goatsuckers lay their eggs on the ground or leaves, and the eggs may be suitably incubated in most any level field or wood. If then, the bird wishes to remove its eggs to a place of safety, it is reasonable to think that it will do so if it has the ability. That it has the capacity there is no doubt, as anyone will agree with me who will fit an egg of the two species of birds into their owner's mouths.

Although the eggs of a species follow a type, and eggs of a kind are generally so nearly alike that an expert can identify them as rule, there are frequently cases of marked difference, and stranger still, there are not rarely instances where one or two eggs in an otherwise normal set are so peculiarly shaped, so large or under sized, or strangely marked, or not marked at all, that the oddities in no way resemble the others of the set. To simply enumerate a list of oddities would take too much of our space, for much investigation has been devoted to this subject. Certain it is that much that is credited to an abnormal condition, especially as regards peculiarities in coloration, is nothing more than an idiosyncrasy of the bird. This is markedly noticeable in certain cases, where certain pairs of birds have laid characteristic sets of peculiarly colored eggs, and which have been noted season after season. So marked is the set of eggs laid by a particular bird that collectors have recorded the peculiarity for years. For instance, many collectors make a speciality of collecting and recording the sets of hawk's eggs, and I have known of a collector telling just the route that was traversed by another "egg crank" by looking at the sets of eggs taken on a day's trip. This knowl-

edge was gained by previous year's experience with the same pairs of birds, for birds of prey, especially hawks, nearly always return to the same neighborhood, and generally to the same tree, and in my experience I do not know where a pair of hawks has been driven from a piece of woods by persecution from egg collectors, and the only way to get rid of a pair of located hawks is to kill them or chop down the forest.

It is difficult to satisfactorily account for the variations in the eggs of a set, both as to markings and size and shape. Some hawks of my acquaintance lay very handsomely marked eggs, while others of the same species habitually deposit indifferently marked shells; and still others lay very plainly marked examples in sets of otherwise well marked eggs. In the nests of certain pairs of Red-tailed and Red-shouldered hawks we are sure to find sets of eggs marked almost identically season after season. It is not unusual to find in the nest of the Red-tailed hawk, one well marked egg and the other almost, or wholly without spots. The same peculiarities may be noted in the eggs of the smaller birds. For instance, some Phœbes habitually lay spotted eggs, and this variation from a standard will be found to obtain in all sets of eggs laid by this particular bird, as I have noted season after season.

The Humming-bird in Illinois.

It was so destined that many years should elapse from the time I began looking for the diminutive home of little "*Trochilus colubris*," until the day I should be rewarded for my untiring efforts, by finding one of these interesting little gems of bird architecture.

This little winged fairy of dazzling brilliance, is well known as the smallest of all our eastern birds, yet a better idea of its tiny form may perhaps be

realized, when we speak of its weight—a slight 20 grains—body, feathers and all.

If I were asked what bird has proved the most interesting study for me, I should answer without hesitancy—the Ruby-throated Hummingbird.

If Nature in some lenient mood should grant to me the *creation* of a bird-form in accordance with my idea of perfectness, I would stop at sight of the male "*colubris*." I would not change a single feather of this little creature, so perfect in form, so lithe in action, so resplendent in plumage, but if I might add, to his many charms, a sweet bird song, would he not indeed be perfect?

The male Hummer is the more beautiful of the two, because of the rich, ruby throat, which is lacking in the female.

This beauty spot must be seen in strong sunlight, to fully appreciate its brilliant lustre, for few bird colors (in our northern zone at least) will equal or even approach the deep rich shades of ruby and green and the delicate sheen, of the live Ruby-throat. A dead bird in the hand, loses much of that freshness and sparkling reflection, so noticeable in its active movements.

An early Sabbath morning of the present season found me rambling in the woods south of the village. Stopping for a moment's rest under a small, bushy tree at the edge of the timber, I was soon unconsciously surrendering to a feeling of lethargy, when I was aroused.

Three Ruby throats (two males and a female) with a buzzing introduction, presented themselves and alighted on a dead twig, within four feet of my face. The rising sun shone on them as they preened and smoothed their feathers, in the making of their morning toilet. A more beautiful sight I have never witnessed. I feasted my eyes on them, scarcely daring to breathe, until an aggravating mosquito caused me to make an untimely movement. In a flash the

scene was changed—the living jewels were gone.

The rapidity of the Hummer's flight is one of its most wonderful achievements. It possesses a miraculous force of energy in its tiny wings, so great a velocity that the eye finds extreme difficulty in following its flight. Only a slight buzz with no perceptible change or exertion in its motion, is sufficient to carry it instantly from one flower to another. Indeed it is the only bird of my observation, that has seemed to have mastered the art of flying equally well, either forward, sidewise or backward.

Not the least of its accomplishments, is the art of nest-building. Who has looked upon a nest of the Hummingbird and not marveled at the skill shown in fashioning so dainty, yet so substantial a structure—a structure not within the possibilities of human hands.

The Ruby-throated Hummingbird while not abundant, may be called a fairly common summer resident of this part of Illinois. It does not often arrive before May, but its departure in the fall is delayed until the frosts have claimed many victims. It is not of unusual occurrence to find a Hummer hanging quite dead, to the vines about the residences, after a sharp October night's frost.

While it is from the flower-beds of the village yards that we form our acquaintance with little "*colubris*," we must hie to the woods, if we would wish to pry into his family secrets.

A limited number build their little homes in the vines and shrubs of the towns and in the orchards of the farm yards, but the great majority prefer the deep, dark, silent woods, where they are practically undisturbed.

The rising sun of June 6, 1900, saw me "to the woods away" and an hour later I was counting warblers in a fine, old bit of timber in the Salt Fork bottoms. I noticed a Redstart dart out into the open with a Hummingbird in hot

pursuit "charging bayonets." I thought this action rather suspicious on the whole and particularly so when I saw the little charger return to the same vicinity. It was my intention to keep an eye on her, but "there's many a slip" and I lost sight of her suddenly and completely.

With the hopeless air of one "looking in a strawstack for a needle," I remained quite still. Scanning the tree tops for that one wee spot where the nest was probably resting and particularly observing the innumerable, good locations where the nest was'nt, I recalled the philosophy of a ten year old German boy who was wading a swamp with me earlier in the season. I had just examined a likely-looking clump of weeds and remarked that it was a fine place for a yellow-throat's nest. "Oh! lots of good places they is, Mr. Hess," the youngster added, "but its not places we're after—its nests."

Another commotion in the tree-tops gained my attention. This time, a Wood Pewee had ventured too near the Hummer's residence, and he too with surprised and painful cries, beat an ignominious retreat.

For once, I was more fortunate and succeeded in locating the tree when little "*colubris*" returned and disappeared.

Advancing to the tall slender sapling, I struck it lightly with my hatchet and immediately she was in the air, buzzing excitedly. I was now certain I had found the right tree, but was still unable to locate the nest, until the Hummer settled upon it.

The nest was saddled to a horizontal limb fully twenty-five feet from the ground but while almost invisible from below, the bill and tail of the setting bird could be plainly seen.

To climb so slender a tree was out of the question, but from a near-standing hickory, I gently bent the sapling by means of a forked pole and safely secur-

ed my first set of the Ruby-throated Hummer.

The little female repeatedly left and returned to the nest as I drew nearer and at one time was within three feet of my hand. The nest was beautifully constructed of pure white wool and artistically covered with small lichens—so perfect an imitation of a small green knot that ordinarily the eye would pass over it unobserved.

Complete, the nest measures but one and one-half inches in diameter, with three-fourths of an inch diameter and one-half inch deep as inside dimensions. The two fresh eggs were typical specimens.

Near by I found another nest almost completed. My examination must have been resented by the owners, for it was promptly deserted and I collected the empty nest a month later. It was also saddled to a branch of a sapling but much nearer the ground—only 9 feet.

An hour later, while passing through a very dark part of the timber, I startled another Hummer. Ordinarily, I would not have noticed the slight humming sound, but I was gradually becoming accustomed to the buzzing that so clearly determines the presence of one of these little birds.

Cautiously advancing and intently listening, I succeeded getting in close proximity, the actions of the Hummer proving that I was in "warm" territory.

By following the same program as previously, I soon located the nest snugly fastened to a branch of a small sapling, just out of reach from the ground. This was a larger nest than my former finds, being two inches in diameter. It was also constructed of pure white wool and green lichens and contained two fresh eggs.

Next season I expect to pass many pleasant hours with the Ruby-throats and while I hope to find many more nests, I feel that in justice to these interesting little neighbors, my cabinet

must not contain more than the two sets I now possess.

ISAAC E. HESS,
Philo, Ill.

Association for the Protection of Wild Birds in Scotland.

To the Editor of The Oologist :

We beg to call the attention of your numerous readers to this association which is now forming in Edinburgh, Scotland.

The scheme is brought into existence by the pitiless destruction of hundreds of thousands of birds annually massacred, generally in the breeding season, to supply the demands of a barbarous fashion in dress and decoration.

The world at large can ill spare the brightness of the rarer species, while agricultural districts suffer owing to the alarming decrease of the common kinds provided by nature as the great grub destroying agency; an agency for which science can find no sufficient substitute.

We ask the co-operation of your readers and as distance is no object in joining such a scheme, we hope to get a generous response.

With the kind permission of you, Mr. Editor, we shall publish a list of all members when a sufficient number of names have been received. We shall also be glad to acknowledge any donations which may be received to carry on such an Association. The public mind at this time is taken up with the war now raging in South Africa and rightly too, but the humane ought to give a little thought to the war which is being constantly waged against the birds in all countries. Trusting you will find space for this letter,

Yours faithfully,

W. A. NICKOLSON (Goldfinch),

JOSEPH ALLAY,

39 Tower St., Portobello, W. B. Scotland.

The Giant Cactus as a Nesting Place for the Western Red-tailed Hawk.

The Giant Cactus (*Cereus giganteus*) is the favorite nesting place of the Western Red-tailed Hawk in the desert region south of Tucson, Arizona.

Sahuara is the Indian name for this cactus and is the most used name by the inhabitants of this region. It often reaches a height of forty feet, and on the branches the nests are built.

The nest is generally built high enough to command a view of the surrounding country, and may be seen for a distance of two miles, or with field-glasses as far as you can see; for this reason it is an easy matter to find their nests, but not so easy to obtain their eggs.

The position of the nests and the variation in the size and markings of six different pairs of hawks may be of interest.

March 16, 1898. Nest in Sahuara, 16 feet from ground, made of sticks, lined with small sticks, grass and a few feathers, eggs, 2.32x1.87, 2.23x1.83. Incubation six days, marked with blotches of very light brown.

March 21, 1898. Nest in Palo Verde 12 feet from ground, made of sticks, lined with small sticks and bark, eggs, 2.22x1.80; 2.16x1.78; 2.15x1.79. Every egg is marked entirely different in this set, first spotted evenly with brown and lavender, having more lavender than brown; second, blotches and scratches of yellowish brown at great end; third, has three large and several small spots of dark brown.

March 29, 1898. Nest in Sahuara 18 ft. from ground, made of sticks lined with bark and grass; the bird before leaving nest covered up one of the eggs. Eggs, 2.25x1.85; 2.23x1.83. Incubation two-thirds, marked with irregular spots and blotches of light and dark brown.

April 1, 1898. Nest in Sahuara 6 feet

from ground, made of sticks lined with bark. Eggs, 2.23x1.77; 2.13x1.74. Incubation begun. First egg marked with spots and blotches of brown, second with spots and blotches of lavender evenly over whole egg and at small end marked with blotches and scratches of brown.

April 2, 1898. Nest in Sahuara 12 feet from ground, made of sticks lined with bark, grass and a few feathers. Eggs, 2.40x1.81; 2.32x1.90; 2.25x1.79. Incubation six days; marked with blotches, spots and scratches of reddish brown, one egg has all the markings at small end.

April 10, 1898. Nest in Palo Verde 10 feet from ground, made of sticks, lined with bark, leaves and feathers. Eggs, 2.28x1.85; 2.25x1.80. Incubation one-third, first, marked with light and dark brown and lavender, second, with light brown at small end.

Some nests were over thirty feet from the ground.

J. H. CLARK.

A False Alarm.

While out on a ramble recently I was passing near a thicket, when just in front of me in the brush came very distinctly the distress cry of a Robin repeated several times. A number of robins from the neighborhood came to the rescue, and I, being curious to know the cause of the disaster, walked up close to the brush and looked in. What should I see but a lone catbird sitting on a branch a half a dozen robins hovering around her. They, however, soon left and the Catbird hopped about acting as if she was really proud of the disturbance she had caused. What could have been the object of the Catbird?

D. S. BULLOCK,
Agr'l College, Mich.

If You Want to Know

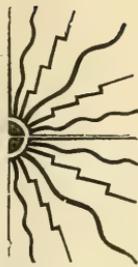
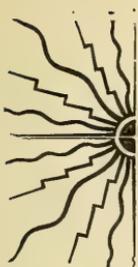
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VOL. XVII. NO. 9.

ALBION, N. Y., NOV., 1900.

WHOLE NO. 170

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THE OÖLOGIST.

VOL. XVII. NO. 9.

ALBION, N. Y., NOV., 1900.

WHOLE No. 170

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OÖLOGY, ORNITHOLOGY AND
TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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FRANK H. LATTIN,
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The Belted Kingfisher.

Over nearly the whole of the United States members of the angling craft are familiar with our common representative of the family, the Belted Kingfisher.

er, *Ceryle alcyon*. In some quarters, I understand, this bird is not to be found, and again it is shown to share territory with a species only found west of the Mississippi. We will only speak here of our familiar bird of the East, known to almost everyone, and so common along our small streams, as well as upon our largest rivers, ponds, and lakes, quite eight months of the year. This bird, so abundant in the Mississippi Valley, as also to the East and way north into the British possessions, has association with the fishermen who make it at once a bird of augury with many, as well as a pleasing companion to anglers. I leave it to others to judge the truth of the many fabulous stories of this innocent bird, mysterious stories which we hear so often. That the earliest of the ancients took much interest in the Kingfisher, from an esoteric point of view, is fully proven by writers as we have references to it before the foundation of Rome was laid, and some of the hieroglyphics of Egyptian historians attach an interest to it as of marvelous powers.

In an inspection of its name we learn much, both as to acknowledgement of the bird's worth by ancients and moderns, as well as the happy connection between the Kingfisher and the ancients. Kingfisher is a very ancient English name, and may be found in many books centuries old. The word "belted" of course, is merely of specific distinction describing our bird, which has the distinguishing feature of a broad belt of color on its otherwise white breast. It surely is an honor to a bird to be named kingfisher, and we all, when viewing our friend's performances on the lake or stream, acknowledge that

he deserves the title. If we now examine the scientific name, *Ceryle alcyon*, we find that the generic name *Ceryle*, or *Alcedo*, as the type of the family *Alcedinidae* is called, means, I am informed, Kingfisher. The name *alcyon*, it is claimed by some, is given in allusion to its sword-like bill, the sense of which may readily be called to mind by those familiar with the dagger-shaped mandibles. Falchion, too, is possibly derived from this source. But if we go back to ancient Greece we will find that three thousand years ago this bird had a connection with the weal and the woe of the inhabitants. *Hals* is the Greek for sea, and *kunani* for search. We may also learn that *halyon* is a term applied by the ancients to the seven days which immediately precede and follow a particular date, from the circumstance that the *halyon* or Kingfisher selected that period for incubation, and they believed on that account the weather was always remarkably quiet about that time, hence the words 'halyon days' have passed into a proverb, as denoting times of peace and tranquility."

In tracing out this name Kingfisher, we are pleasantly surprised to find the connection between it and the "halyon days" of our agreeable trips on lake and river, when the blue-coated, wary, yet curious inclined birds, flitted about our seat, loudly proclaiming with strident notes against our invasion. Ah! those were happy days with the bass on the lake or river, or along the edge of the cherished, well known and remembered trout stream, and whether the expedition was for trout or bass a Kingfisher was always on hand. Birds always look so much alike as to leave an impression that the same one always accompanies us. If we are floating down the stream, the mocking fellow is always ahead, and at the next bend and he drops from his perch and goes sweeping away ere we are within gun-

shot of him, appearing again at the next turn, where with his blue coat, white vest and blue or bronze tie, dressed low, he is seen perched demurely on a branch or dead stump at the side of the water. Sometimes one flies past us up the stream, describing a safe radius, but soon his rattling notes can be heard as he cuts across a narrow neck of land below us, and again we continue to chase him.

I have met the Kingfisher everywhere I have traveled east of the great river, and have always found him the same successful fisher and discreet, strong flier, and with that exasperating, mocking clatter of a laugh. In the Lake Superior region to the lower part of Florida he fishes successfully, either in fresh or salt water, and dives with apparently the same precision in the coffee colored flood of the Ohio as in the crystal waters of the St. Lawrence.

There are many interesting points to study about our birds, but there are very few which will prove more interesting than the Kingfisher, or repay us better for our pains. Upon an intimate acquaintance we will find him a digger of wonderful ability, a fisher of surprising merit, as well as a remarkable provider for his family and careful instructor of progeny. Add to these attributes that he is wonderfully careful with his dress, often presenting the plumage of his coat and vest, in which he takes the pride of a swell, and that he is exceeding wasteful at seasons, we have our halyon fairly summed up.

In this section, Lower Michigan, the Kingfisher usually begins nesting in early May, and generally about six or seven weeks after his first spring appearance. Some seasons the birds arrive in early March from their southern haunts, and when the ice is still covering the lakes and ponds. Several nests have been found with eggs by our local collectors in April, but usually it is useless to spend the time in digging

out the burrows before the middle of May. This singular bird has the remarkable habit, shared in by only two other species of birds, to my knowledge in this section, of laying its eggs in a burrow in a bank or side hill, usually of sand. The tunnel is of a size to easily admit a bird, and is from three and a half to six feet long, but generally about four to four and a half feet in length. The tunnel is usually straight, but is sometimes found to wind slightly. At the end an enlargement is hollowed for the accomodation of the eggs and setting bird, and herein the duties of incubation are performed.

The eggs from five to six in number are smooth, white and shining, as with nearly all birds who nest in excavations. They much resemble the eggs of the Burrowing Owl. When the young are fed at first the old ones partially digest the fish and then regurgitate, but long ere the young anglers have left their home in the sand bank for a life on lake or river, they are able to engulf as large a minnow as the older ones.

As a fish destroyer the Kingfisher is undoubtedly at the head as to numbers in the northern United States, although the loons, herons, and many other species are far more destructive as weight goes. I have repeatedly seen this blue-coated epicure trying his skill along trout streams, and at these times wished that the whole race was obliterated, particularly when I had good reasons to begrudge him his never varying luck, and mine was poor.

The Belted Kingfisher is the only species in my neighborhood which dives clear under water for its prey after hovering over the water. Other birds as the ducks and loons dive when swimming, while the Osprey drops upon its prey with its feet first, but the Kingfisher is the only bird which makes a regulation dive from the air. It secures its minnow about once in three

attempts, and I have seen a bird dive in the same spot seven times before success crowned its efforts.

MORRIS GIBBS, M. D.,
Kalamazoo, Mich.

Prairie Hen in Illinois.

It is with great interest that I note the gradual increase of the Prairie Hen (*Tympanuchus americanus*) in this part of Illinois.

This increase while very slow for several years, has now become so noticeable as to excite comment among even the casual observers of bird-life. However it has long been a well known fact among the hunters, who have been handicapped by an excellent game law and who are in consequence clamoring for an extension of time for shooting this noble bird.

It is owing to the framer of the "three year law" in which no Prairie Chickens were lawfully killed, that "Tympanuchus" has gained a new lease of life. The result is, that a bird rapidly becoming extinct, is now so well rooted and established that its future is almost assured.

Our present game law allows its shooting only during the space of thirty days or from Sept. 1st to Oct. 1st and is a grand aid in the preservation of the species.

As with all our game birds, the Prairie Hen raises a large family. The complete set numbers from 12 to 17 eggs and when a lesser number is found I believe it to be due to some foreign agent.

The Prairie Hen usually begins nesting about the middle of April and the full complement is ready for incubation about May 10th. A typical set of thirteen eggs in my collection were found April 27, 1898. I regard this as one of the earliest sets as the hen was setting and incubation had fairly begun.

The Prairie Hen is a very close setter and is remarkably successful in hatching its full quota of eggs. A set of fifteen eggs if undisturbed is almost sure to be transformed to fifteen chicks—a result seldom realized by the domestic hen. It is all the more remarkable when we think of the nesting site—flat on the ground with neither protection from the cold winds nor shelter from the storms.

I was tramping along a grass plot between two fields (one mile from town) on June 10th of the present season, when I flushed a Prairie Hen from what had formerly been sixteen eggs. I had arrived at the supreme moment and witnessed the transformation scene. The little fellows were just hatching out and catching their first glimpses of the big outer world. First I would see a little bill thrust through the shell—then a crack would start at the opening, gradually spreading until the egg fell apart and "Tympanuchus" junior would step out as unconcerned as though he were quite used to the proceedings. I was almost ready to pronounce them *matured at birth* when I saw two enterprising youngsters running around with the shells on their backs—so different, for instance, from the blind and helpless little creatures awakening to life in the Robin's nest.

In a half-hour the full sixteen were released—not an infertile egg in the entire lot. "Little fishes," thought I, "what a sight this will be for some gunner about September first." The flock is still there at this time but I am in hopes the gunner will not materialize.

One of the peculiar traits of the Prairie Hen is its extreme "touchiness" regarding its nest. Never have I found an incomplete set of eggs that was not promptly deserted by its owners.

This has become of such frequent and persistent occurrence with us (my fellow oölogist, Dr. Jessee, and myself) that the doctor (for the benefit of other

observers) volunteers a remedy. His advice is that we look only for complete sets on future occasions.

The Prairie Hen is not particular about its nesting sites, the nests being about equally distributed in the meadows and corn fields. Quite a favorite location is near a fence post or low hedgerow between two fields, with a marked preference for the former situation. Unfortunately nearly all the corn field nests are destroyed with the early spring plowing, for few farmers will trouble to plow around them and few of the birds would return to the nests if they did.

The nest proper, when there is one, seldom contains more than a few grass-stems. Ordinarily no attempt at nest-building is made the eggs being deposited in a hollow of a grassy surface.

Frequently when the corn field site is chosen the eggs lay directly on the bare ground and a hard beating rain will often imbed them in the loose soil. It is difficult to understand how these are successfully brought to the hatching point.

The most harrassing enemy of "Tympanuchus" is the common Crow (*Corvus americanus*)—that agent of destruction so well known and instantaneously recognized by all the birds. A few days since a farmer told me of a Crow and Prairie Hen episode of which he was an eye witness. He was plowing in a field where he had previously located a Prairie Hen's nest containing fourteen eggs. The nest was beside a fence between two adjoining fields and in consequence was in little danger of being disturbed.

His attention was attracted by an unusual commotion and drawing nearer he saw a fight in which the Hen was bravely defending her property. As he advanced to the rescue (he afterwards saw his mistake) both adversaries flew away. He found the nest sadly disturbed and four eggs punctured

by the Crow's sharp beak. Removing the broken shells he returned to his work. The Prairie Hen, owing to its shy nature, was slow in returning, but before the farmer could plow around the field the Crow (which by the way has never been accused of timidity) had made sad havoc of the remaining eggs.

While gazing over a large meadow early this season I saw a Crow drop suddenly to the earth in a manner so suspicious that I determined to watch developments. He arose and dashed downward, again and again, until a frightened Prairie Hen flushed and flew hurriedly away. The Crow immediately dropped into the grass and it needed no guessing on my part to convince me of what was going on.

I am led to believe from the above incidents that this style of nest-destroying is very frequent and when all the misfortunes in the life of "Tympanuchus" are considered it is truly wonderful that they are able to show an increase.

The Prairie Hen is a constant resident with us and spends its whole life in one locality. They begin to flock as soon as the young are able to fly and continue in this state until nesting begins the following spring, when they separate in pairs.

A flock, I am led to believe by their number, is a single family, consisting of parents and young of the year.

One of the most interesting performances of the Prairie Hen is the low drumming noise made by the male at the first signs of opening spring.

If you will examine him closely you will find at either side of the neck a spot devoid of feathers and if you are so fortunate as to get near enough to see this spot in action you will enjoy a novelty indeed. As the cock struts to and fro displaying his many charms before a bevy of admiring females, these bare spots are distended until they quite resemble toy balloons. The drumming noise is made by expelling the col-

lected air through the mouth.

On still mornings it can be easily heard at a distance of three or four miles and beginning about four o'clock is continued with marked regularity until six or after. It is one of the first bird notes of spring, and referring to my notes I find February 20th about the average date. The present season I heard the first drumming on February 11th, which is my earliest record.

The long drawn out "*Boo-roe-roo*"—is difficult of description and perhaps can be no better transposed into English than by using the phrase generally attributed to it by the boys in this locality, "You-ole-fool." While we may not sympathize with his ungallant way of announcing to the sleeping world the birth of a new day, may not father "Tympanuchus" be forgiven for occasionally using the expression? Perhaps it is his only way of protesting against the farmer's provoking custom of turning his nest over in the furrows.

To see him in his most interesting moods—when the determined swains meet in battle royal, to decide the great question as to which shall be "cock of the flock" and "lord of the realm," the successful one of course claiming his choice of the females for his mate—will occasion many wearisome and disappointing trips. When at last you have crawled on hands and knees to the early morning rendezvous, irrespective of the sticky surface and garment-soaking dews, and have gazed upon proud "Tympanuchus" dragging his wings stiffly on the ground—when you have watched the excited, cackling females encouraging their lords to battle and have heard their wild, nerve-destroying laughter—for all the world like the babble of a gathering of maniacs—you will have felt rewarded for your trying exertions.

You will have seen a performance given to no human eyes but *he* who is willing to sacrifice personal comfort

and early morning naps and who *will not* be denied.

ISAAC E. HESS,
Philo, Ills.

A Pair of Cactus Wrens.

On the seventh of March, 1899, I found a Cactus Wren's nest containing four eggs. Now there is nothing remarkable about this, save that it prefaces the taking of a remarkable series of eggs from one pair of these interesting little birds. I left the set two days, and then, on the 9th, as no more eggs had been laid, I took the set, which proved to be about four days incubated. The nest was, by actual measurement three and one-half feet from the ground and was the only nest in this particular group of cacti clumps, which cover about two acres of the hillsides near my home here in the heart of the Southern California Oil Field. In this case then, no decoy nest had as yet been built, probably for the reason that no collector had ever disturbed their retreat before.

Three or four days later they commenced operations on a second nest, from which, on the 22d of the same month, I took four eggs, incubation one day. This nest was built four feet from the ground in a clump of cacti about fifty feet from the first nest.

They then selected one of the decoy nests (I neglected to state that three or four very poor nests were built, though not lined with the usual heavy lining of feathers, at varying distances from the second nest) and on the 4th of April I took my third set, this time of five eggs from the nest placed three and one-half feet up in cactus. It will be noticed that the differences between the first and second sets, and the second and third sets were equal, viz: thirteen days. So when thirteen days elapsed, I, after some searching, located their fourth nest only two and one-half feet

up in low cactus. This time it held four eggs, but in taking them from the nest I succeeded in breaking two. I thoroughly cleaned the nest from bits of shell and blood-soaked feathers, leaving the two whole eggs. She laid a third the next night (evidently the full set would have been *five*) Then after the lapse of another day and night I took the three eggs. One decoy nest was built in this case, but seemed to differ from usual decoy nests in that it was but a few feet from the home nest and was warmly built and lined throughout. Heavy rains came on about this time and I think the male bird used this extra nest for his roosting place at night. At any rate I have often flushed him (or her (?)) from it on my daily trips to the nest.

After I took this set the pair were idle for two days and then roofed over a deserted Mockingbird's nest in an elder tree near by. In this the female laid one egg. I left it three days, and as the birds were never seen, notwithstanding the fact that I went to the nest on three different nights, I took the one egg. This nest was about ten feet from the ground and no decoy nests were built. Now it happened that (this I learned afterward) a neighbor had found *this* nest a day or two before I went to it and took from it four eggs. Thus her fifth set was of five eggs. My data for the one egg was May 3d.

Just eight days later, May 11, I took my sixth set, consisting of five eggs, from the nest which I mentioned above as the probable roosting place of the male bird at night.

Thirteen days afterward they had built an entirely new nest and laid their seventh set, this time of four eggs. The nest was placed ten feet from the ground in the same elder tree mentioned before. No decoys were built, and on May 24th I took this set.

Next time they moved to another

elder tree about 300 yards over a low ridge into another canyon. Here they built a bulky nest some fifteen feet up, from which on the 8th day of June I took five eggs, incubation very slight, minute bloody traces being visible in the yolk and white of the eggs.

This last, it will be remembered, was their eighth set. Now for their ninth set they changed the entrance of their nest which had held the seventh set to another side and relined the nest. On the 18th of June I took from this nest a complete set of four eggs.

Where they then went I do not know, but there is a pair at present nesting on this hill. They have raised one brood already and a day or two ago presented me with a fine set of five fresh eggs.

Here then were nearly twenty nests built and forty-one eggs laid in the short period between March 9 and June 18—or three months and nine days, something over one hundred days.

The eggs seem to be quite uniform both in size and manner of markings. The intensity of color, however, shows a gradual decrease from deep salmon red to a very weak pink. I have noticed, however, in a series of Pacific Horned Owl eggs taken from one pair of birds this year and consisting so far (they are still laying) of one set of five, two sets of three and one set of two, that there is a perceptible decrease in size of the eggs.

HARRY H. DUNN,
Fullerton, Calif.

May 10, 1900.

Birds Observed within the Corporation of Kalamazoo, Mich.

The corporation is at present two and three-quarters by three miles in size, but in past years was smaller. There are many changes and many species once abundant within our boundaries are now seldom or never seen. These observations extend over a period of more than thirty years.

The species found breeding within the corporation are marked with a *.

Nos. 1, 2, 3, etc., refer to foot-note.

Horned Grebe 1
Pied-billed Grebe
Great Northern Diver
Red-throated Diver
American Herriag Gull
Ring-billed Gull 2
Bonaparte's Gull
Wilson's Tern
Double-crested Cormorant 3
American Merganser
Mallard
Wood Duck
Pintail Duck
Ring-neck Duck
Butter-ball Duck
Golden-eye Duck
Old Wife Duck 4
Whistling Swan
American Bittern
Great Blue Heron
Carolina Rail *
Virginia Rail
American Woodcock *
Wilson's Snipe
Grass Snipe
Bonaparte's Sandpiper
Least Sandpiper
Semipalmated Sandpiper
Greater Yellow Legs
Solitary Tattler
Field Plover
Buff-breasted Sandpiper
Spotted Sandpiper *
American Golden Plover
Killdeer Plover *
Semipalmated Plover
Bob White
Ruffed Grouse *
Prairie Hen
Wild Turkey 5
Wild Pigeon * 6
Mourning Dove *
Turkey Vulture 7
Marsh Hawk
Sharp-shinned Hawk
Cooper's Hawk *
American Goshawk 8
Red-tailed Hawk *
Red-shouldered Hawk *
Broad-winged Hawk
Bald Eagle
American Sparrow Hawk *
American Osprey 9
Barred Owl
Saw-whet Owl 10
Screech Owl *
Great-horned Owl *
Snowy Owl
Yellow-billed Cuckoo *
Black-billed Cuckoo*
Kingfisher *
Hairy Woodpecker *
Downy " *

Yellow-bellied Woodpecker
 Red-headed " *
 Red-bellied " *
 Golden-wing " *
 Whippoorwill *
 Nighthawk *
 Chimney Swift *
 Ruby-throated Hummer *
 Kingbird *
 Great-crested Flycatcher *
 Pewee *
 Wood Pewee *
 Olive-sided Flycatcher 11
 Acadian " *
 Traill's " *
 Least " *
 Horned Lark
 Prairie Horned Lark *
 Blue Jay *
 Crow *
 Bobolink *
 Cow Bunting *
 Red-winged Blackbird *
 Meadow Lark *
 Orchard Oriole *
 Baltimore Oriole *
 Rusty Blackbird
 Bronzed Grackle *
 Evening Grosbeak 12
 Pine " 13
 Purple Finch
 American Crossbill
 White-winged Crossbill 14
 Lesser Redpoll
 American Goldfinch *
 Pine Siskin
 Snow Bunting
 Lapland Longspur
 Grass Finch *
 Savanna Sparrow
 Yellow-winged Sparrow
 White-crowned " *
 White-throated " *
 Tree " *
 Chipping " *
 Field " *
 Black Snowbird
 Song Sparrow *
 Swamp " *
 Fox " *
 Towhee *
 Rose-breasted Grosbeak *
 Indigo Bunting *
 Black-throated Bunting *
 Scarlet Tanager *
 Purple Martin *
 Eave Swallow *
 Barn " *
 Tree " *
 Bank " *
 Rough-winged Swallow
 Cedar Bird *
 Northern Shrike

White-rumped Shrike *
 Red-eyed Vireo *
 Warbling " *
 Yellow-throated Vireo *
 Solitary " *
 Black and White Creeper
 Nashville Warbler
 Tennessee " *
 Parula " *
 Yellow " *
 Black-throated Blue Warbler
 Myrtle " *
 Magnolia " *
 Chestnut-sided " *
 Bay-breasted " *
 Black-poll " *
 Blackburnian " *
 White-browed " *
 Black-throated Green " *
 Pine " *
 Palm " *
 Prairie " *
 Oven Bird *
 Large-billed Water Thrush
 Maryland Yellow-throat *
 Hooded Warbler
 Wilson's " *
 Canadian " *
 American Redstart *
 American Titlark
 Catbird *
 Brown Thrush *
 Bewick's Wren 15
 House " *
 Brown Creeper
 White-breasted Nuthatch *
 Red-bellied " *
 Black-capped Chickadee *
 Golden-crowned Kinglet
 Ruby-crowned " *
 Blue-gray Gnatcatcher *
 Wood Thrush *
 Wilson's " *
 Swainson's Thrush
 Hermit " *
 Robin *
 Bluebird *

MORRIS GIBBS, M. D.,
 Kalamazoo, Mich.

FOOT NOTE:

- 1 Only one seen.
- 2 Rare.
- 3 Straggler.
- 4 Small flock in city.
- 5 Now nearly extinct in country.
- 6 None seen in years.
- 7 First appeared over twenty years ago; at present not rare.
- 8 One taken many years; rare.
- 9 One taken.
- 10 One taken; rare.
- 11 One seen and heard.
- 12 Rare straggler.
- 13 In large flocks two seasons.
- 14 Occasional; straggler.
- 15 Rare straggler.

The Student's Shell Collection.

This Collection contains Forty Small Shells collected from all quarters of the Globe. all of which are numbered to correspond with a catalogue, which gives their proper, common and scientific names, with the locality where found. These shells when purchased individually and properly labelled would cost from 2 to 25 cents each. The following are the specimens found in this collection:

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A MONTHLY PUBLICATION DEVOTED TO

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VOL. XVII. NO. 10.

ALBION, N. Y., DEC., 1900.

WHOLE No. 171

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During the past eight months I have been House Physician and Surgeon at the Erie County Hospital, (Buffalo, N. Y.) consequently all matters connected with my old business, and demanding my personal attention, have been at a stand still.

My term of service expired on December first. Since that date and during the balance of the month my time will be devoted to straightening matters pertaining to my old work and to arranging, inventorying, cataloging and pricing the material I have remaining on my hands (which in the aggregate will amount to several thousand dollars).

On and after January 1, 1901, the demands of my profession will come *first* and my entire time will be devoted to the same, if required. My Natural History work will then be of a secondary nature.

However, everything in the line of Specimens, Books, Supplies, etc., which I have left will be priced, catalogued and offered for sale AT VERY LOW RATES early in the New Year. The disposition of the same will be under my personal supervision, and the filling of orders, packing, etc., will be attended by able assistants, who have been with me in that capacity for years.

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Faithfully,

FRANK H. LATTIN.

Albion, N. Y., December 8, 1900.

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THE OÖLOGIST will be issued regularly on the first of each month during PAN-AMERICAN year, and *possibly* on the 15th in addition, making it *semi-monthly*—in which case announcement will be made in January issue and terms of subscription will not be advanced.

THE OÖLOGIST.

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THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND
TAXIDERMISTRY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

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Bird Music

All birds that I have met with have means of expressing themselves by sound, and though many are far from entertaining to man, it is reasonable to admit that the discordant caw of the

crow is as expressive to its mates as is the bubbling melody of the Warbling Vireo to the little Greenlets, or the guttural honk to the Herons. These songs, call-notes and twitterings differ to a wide degree in the various species, but are nearly identical in birds of a kind-tending to prove that the notes constitute a language, or at least a method of communication.

There has appeared a work, which, I understand, attempts to demonstrate the existence of a language among our near relatives, the monkeys. I do not doubt that a language exists sufficient for their requirements in every respect, but we are denied the privilege of comprehending it in the least degree. In fact the notes of birds are as intelligible to our ears as the chattering of monkeys, and taken in connection with their movements are as expressive of their desires as the sounds made by any animal we know. Then too, granting that a language exists with each species of animal and bird we must admit that the single croak of the Raven comprehends as great meaning as the single faint chirp of the gorgeous Hummingbird, and the estatic warble of the Bluebird is equally expressive with the discordant gutturals of the Herons or the weird cry of the Loon.

There is much that is worthy of observation in the songs of birds and the time spent in the study of them cannot fail to furnish entertainment. Aside from the pleasure of the true music, we may draw comparisons between the varied ditties, and also the ability is given us to liken many of them to the words of our language. It is this association of the bird with its notes, expressed in words, which often leads us

to name the songster. This is well exemplified in the names Whip-poor-will, Kill-deer, Bob-white and a dozen others. Then there are scores of others which are known by meaningless names; names, however, which are familiar to us and which almost exactly express the call-notes or songs. Under this class we find the Chick-a-dee, the Chebec, Plum-pud-den and Peet-weet.

Many of these notes can be greatly varied and still meet our requirements, but we have relied upon them so long that usage makes them next to indispensable. When in the south I first heard the notes of the Chuck-will's-widow, a species nearly allied to our northern Whip-poor-will, but could not fully satisfy myself that the name and notes corresponded, but after becoming familiar with the nightly seranades, the notes resolved into the accepted name. Northern-born people who have moved to the South nearly all call this species the Whip-poor-will, not recognizing the difference in the notes; yet, surely, if the songs differ to an extent equal to the English pronunciation of the names, then the difference ought to be quickly recognized.

To one familiar with the songs and call notes of our birds, the association of the sound with the performer is instantaneous on hearing it. Nevertheless it is quite a rare thing for a stranger to identify a species by its notes, no matter how much alike are its name and notes. Yet it is easy for all to recognize the Jay-jay in which the harsh screams of the Blue Jay, after the attention has been called to it. No better name could describe our little doorway flycatcher than the sound Phoebe, and yet it is also called Pee-wee as well, and both from a fancied resemblance to its short song.

I have tried to copy the familiar Robin's song many times, but have discarded all attempts as regards English words. Still the following, as some ob-

servers may fancy, fairly describes the soft utterances: "*keeler-keeler-henry; william-william-henry; william-henry-keeler*," and so on indefinitely. The Meadowlark is flying over the field or wading about in the grass utters in a plaintive key the words "*dear children*". If we pass near a marshy tract we hear the Redwings uttering their quick call-note, as they fly above their nests in the rushes, or the male ruffling himself on a branch will issue his *cher-e-e-e*. From a clump of bushes near come the notes *ka-wee-ehy*, uttered from four to nine times by the Maryland Yellowthroat. He then dives into the brush and rank grass and gives us a series of fine scolding notes. As we pass he challenges us with *tackle-me tackle-me*, or as you may call it, *witchey-witchey*. The Bronzed Grackles are calling to one another *spank-spank*, and now and then a lustrous male grinds out *schleranch*, repeating it three times, to which Mrs. Grackle replies with *schle-ree scree-scee*, which is the extent of their musical ability.

Away out in the marsh are a couple of those queer birds, the thunder pumper, as the American Bittern is often called. The name is given from their peculiar movements made when singing, so to speak. The song of spring and love floats to us in thunderous undulations, *plum-pud-den* repeated four to six times. This bird often called the stake-driver, has another peculiar note or song from which it gets one name. The sound is exactly like *ka-whack*, uttered from three to six times and closely resembles stake driving with a maul. So perfect is the resemblance that it is a common occurrence for a stranger to the bird to look about for a laborer at work. From the lake come the wild, unearthly notes of the Loon or Great-Northern diver, *ko-a-whee-loo-loo*, or again, *key-hoe* reverberating and penetrating.

Returning towards the farm house,

we pass close to a cock, Bob-White which heralds that he is *bob-bob-white*, from the top of the fence. Very few strollers are aware that this species says bob twice, but those who observe at close quarters will detect it at once though the first bob is so indistinct as not to be heard at a distance. Passing through a dense piece of woods, a number of Acadian flycatchers are seen and their notes *kee-peek-up* are heard all about. Above, in the shady top of a tree a Wood Pewee is pouring forth his melancholy refrain, *pee-hee-o-wee-bee-wee*; slowly issuing with plaintive, lingering quaver, which causes one to think the dear little singer unhappy. But it is not so, as it is its love song and answers the same purpose as the pathetic, resonant song of the happy Mourning Dove.

Emerging from the woods we listen to the loud clattering song of the Baltimore Oriole in rivalry with the gushing melody of the Rose-breasted Grosbeak. Both of these birds, as well as the Indigobird near at hand have songs that it is impossible to describe on paper. There are many songs of birds which no power of the pen can describe and we can truthfully say that the best of bird melodies are those which cannot be transferred to paper. This then, is an acknowledgement that bird music is of a superior quality, and the feathered tribe is possessed of factors in the realm of harmony which we are unable to criticise.

There are nearly fifty species of Michigan birds which have songs of merit, but if they were fully described, no one not familiar with bird notes would recognize a bird by its song description.

That there is an expression of feeling in the notes of all of our birds no true lover of our feathered friends will attempt to deny. We are willing to admit the existence of a bond between them and us, and this assumption of a higher relation we do not care to

have destroyed or dispelled by an opinion against the sentiment of our dear little associates. Nevertheless, although I am anxious to invest these creatures, "favorites of creation," as Figuiet so beautifully terms them, with higher attributes of feeling and expression, it remains a fact that their notes do not change in quality as a result of change in emotion, so far as we are able to judge. Let us consider some instances.

A pair of Robins will make a great outcry if their nest is molested; the excited notes of the male corresponding to the battle cry when the birds are mating. Other Robins join the hue and cry and the neighborhood of bird-dom is aroused, for the birds understand and all lend their sympathy and bluster. If the nest is robbed the pair quickly subsides, and the male will probably be singing the same evening; surely the next morning. Within a few days a new nest is begun in the same neighborhood or the old one is again occupied, the song continually proclaiming the joy of the happy pair, so far as we can judge.

I have carefully noted the actions of the bereaved birds in many cases and it is always about the same. In one instance where a nest of the Warbling Vireo was robbed the male quickly returned to the vacant nest and there sang with the greatest joy apparently, for it is the habit of the male of this species to sing on the nest. It may be that the song expressed sorrow, or at least a complaint, but to me the same ecstatic warble was heard that was always given to my ears. I have watched in the vicinity of the nests of the Scarlet Tanager, Rose-breasted Grosbeak, Wood Thrush, Hermit Thrush and Indigo-bird, all fine singers, and have observed that all apparently quickly recovered from the effects of spoliation and sang within twenty-four hours after. In each in-

stance the male tuned up and sang as sweetly as ever.

The species of birds that sing when flying are very few. Of the many birds which utter simple sounds on the wing I am not speaking, for they are in large numbers. If we consider notes of birds an expression of sentiment, then all sounds may be called songs, especially may this be considered true of spring notes. Admitting this, then there are over one hundred species which sing as they fly.

All of the hawks and other rapacious birds that I am acquainted with, utter their discordant cries and screams when upon the wing; the Red shouldered, Marsh and Cooper's Hawks and the Screech and Barred Owls being especially noisy in season. All of the herons utter their guttural notes when on the wing, although the more difficult notes of the greater bittern are not given on the wing. The smaller waders give utterance as they fly, and most of the ducks have been heard, while the geese are notorious gabblers during migrations. Sandhill Cranes issue their notes as they sail, sometimes out of sight. Nighthawks make their only efforts while on the wing, as we should expect with a species which earns its entire living while flying. Its near relative, the Whippoorwill sometimes flies singing through the woods in spring.

The woodpeckers are a noisy set, and without an exception issue the clatter which answers in the nature of a refrain, on the wing. All hunters have heard the "scape" of the Wilson's Snipe, the single note of the flying Woodcock and the agreeable efforts of the Killdeer Plover, Spotted Sandpiper and the Upland Plover, the latter really musical, and many others of the smaller waders.

In the RASORES or scratchers we have a silent list of birds when flying; though the Mourning Dove, Bobwhite and some others are noisy on the perch.

According to classification, the true singers are confined within the division OSCINES while all others are considered non-musical according to this arbitrary rule. This system, constructed from anatomical relations, cannot admit the sweet refrain of the Wood Pewee as a song, as the Pewee belongs to the screamers, and of a necessity this is unfair.

Among the birds which are acknowledged singers the following seven musical species are presented as birds which I have heard sing while flying. The Bobolink is the acknowledged leader in flight song, in fact his rollicking, jingling medley is about equal in excellence with any bird with which I am acquainted. The common Bluebird is a charming exponent of flight singing. It occasionally flutters upward and pours forth its soft warble in a most enchanting manner just after arriving from the south.

The Warbling Vireo, rarely, in a transport of bliss, during the mating season, launches into the air while yet singing, and apparently forgetful of custom, strives to make us, mundane creatures, as happy as itself. This agreeable songster is one of my favorites, and no one who is a lover of bird melody can remain indifferent to its ecstatic warblings.

In May and June we sometimes hear the loud gushing song of the Rose-breasted Grosbeak as the gaudy male flits through the foliage near his prospective home. Even with this undignified flyer, who generally progresses by undulating, vigorous dashes, we can detect a hesitating flutter when the bird sings on the wing.

MORRIS GIBBS, M. D.

Kalamazoo, Mich.

(To be continued)

Black Duck.

Anas obscura Gm., Syst. Nat. I; 1788, 541.

DESCRIPTION.

SP. CH. Size, large. Form, robust. COLOR. *Adult male* Dark-brown throughout streaked on head, neck, and abdomen with pale reddish-yellow; and feathers of remainder of body, especially below, edged with yellowish. Under wing coverts, axillaries, and tips of secondaries, white. Speculum, green with violet reflections, surrounded by black. Feet, greenish-yellow. Iris, brown. Bill, greenish-brown. *Adult female and Young.* Similar, but paler. *Nestlings* Above, including stripe behind eye, yellowish-brown, with several spots of buffy-yellow. Beneath, pale buffy-yellow.

OBSERVATIONS.

Readily known by the universally dark colors. Florida specimens are not only smaller in size, but are lighter in color than Northern birds, the number of tail feathers is less, and there are longitudinal streaks above of yellowish in males. Distributed, in summer, throughout Eastern North America, from Labrador to Texas; winters from Massachusetts, south.

DIMENSIONS.

Average measurements of specimens from North America. Length, 22.50; stretch, 35.80; wing, 10.50; tail, 3.38; bill, 1.90; tarsus, 1.85. Longest specimen, 24.00; greatest extent of wing, 37.50; longest wing, 11.00; tail, 3.50; bill, 2.10; tarsus, 2.15. Shortest specimen, 21.00; smallest extent of wing, 34.00; shortest wing, 10.00; tail, 3.12; bill, 1.75; tarsus, 1.60.

DESCRIPTION OF NESTS AND EGGS.

Nests, placed on the ground in marshy places, composed of grass, weeds, etc. *Eggs*, six to ten in number, elliptical in form, and greenish-brown in color. Dimensions from 1.40 x 2.25 to 1.75 x 2.35.

HABITS

The Black Ducks are, perhaps, the most abundant of the River Ducks in our section, and I have always found them common and breeding, in suitable localities, wherever I have been, between the Gulfs of St. Lawrence and Mexico. In the North, however, these birds are migratory, for although specimens occur quite commonly in Massachusetts all winter, they are birds which breed further north, and are noticeably larger than those which live with us in summer, and which have retreated further south during cold weather. In Central Florida, I discovered a local race which is very yellow in color, and which is constantly resident in the State, where they are remarkably abundant. I found them breeding on Indian River, the nests being placed on the drier portions of the marshes, in grass which was about eighteen inches high. The eggs were deposited during the first and second weeks of April; then about the first of May, I would frequently see flocks of little downy ducklings, following the female, but unless I took care to conceal myself, I did not enjoy watching these little families long, for as soon as the parent became

aware of my presence, she would emit a chuckling note, when away they would scamper, helter-skelter, into the nearest grass, where it was impossible, upon the most careful search, to discover a single young. I once surprised a brood, when they were some distance from any place of shelter, for they had ventured out upon the mud of a creek, at low tide, and I chanced to come out of the high grass, just in front of them. The old Duck appeared to comprehend the situation at once, for she came directly toward me, driving her brood before her, hoping to engage my attention by a display of bravery, while the young escaped into the sheltering vegetation behind me; but placing my gun on the ground, I stooped down and grasped two of the little fellows, as they were running past. The diminutive ducklings uttered shrill cries when they were captured, which drove their parent nearly frantic, for regardless of possible consequences, she dashed about in front of me, with ruffled feathers and half closed wings, often coming within a foot of me, at the same time, quacking loudly. This out-cry attracted the attention of the drake, but he did not approach very near, merely circling

about, some fifty yards distant, quacking softly. Leaving the old female to care for the remainder of the brood, I carried my captives into camp and placed them in a box, the sides of which were about a foot and a half high, but young as they were, they managed to escape.

On the Magdalen Islands, the Black Ducks deposit their eggs during the last of May or first week in June. When in company with Mr. Wm. L. Breeze, near the first of July, I discovered a brood of about a dozen young, my attention being attracted to them, by a whistling sound which they made. They were sitting huddled together, in the top of a small spruce which was lying prostrate over a small stream that flowed through a little ravine. The old duck was absent, and by making a sudden dash at them, I managed to capture three, before they were aware of our presence. The rest dropped into the shallow water, some diving, others creeping into holes, while some sought shelter beneath the roots or overhanging moss; in short, they managed to conceal themselves so effectually, that we only succeeded in finding one which we took out of the water from beneath a stone.

Wild Black Ducks are frequently reared by the inhabitants on the Magdalen Islands, and readily mix with the domesticated race which, however, evidently originated from this species; and those I captured, I resigned to the care of an old lady, who had a brood of domestic birds, but from some unaccountable cause, they soon died.—From Maynard's *Birds of Eastern North America*.

Feeding Habits of the Scarlet Flamingo.

One of the favorite winter haunts of *Phoenicopterus ignipalliatu*s is found on the sandy beaches that abound on the west coast of South America, at about latitude 42° South.

On the north coast of the large island of Chiloe, there are several places of this sort where these beautiful birds may be seen in flocks of hundreds during the months of June, July and August, the winter months in that region.

I remember the first time I walked over one of their favorite resorts. It was on the Pudeto river, near the small town of Ancud. The tides here are rather high owing to the formation of the bay, and as a consequence it enters the river and floods great stretches of sand that border the left bank. As the tide goes out the Flamingoes may be seen here by hundreds. The first time I visited the place the tide had been out some hours and there were no birds to be seen. I was disappointed, for the trip had been made for that special purpose.

However my attention was soon attracted to long rows of small hillocks of sand, or rather, to be more exact, circular ditches in the sand that appeared to have been made while the water was still present. These were about two or two and one-half feet in diameter by five or six inches wide and three or four inches deep. This, of course, gave the central portion the appearance of a small hill about eighteen or twenty inches in diameter. Upon inquiry I could get no information—no one had any idea how or by whom they had been made.

A few days later the mystery was solved when a second visit was made to the place at a more propitious moment.

Upon approaching to within a few hundred yards of where a regiment of these scarlet beauties was lined up, the birds took flight and it was then that I discovered who were the authors of my mysterious little hills.

By subsequent observations I found that the birds took their stand in the water when it was about a foot and a half deep, and at more or less regular intervals about eight or ten feet apart.

Here they remained stationary and turned round and round with their heads under water, catching the small crustaceans that seem to be their principal diet. The form of their beak is such that when it is placed on the ground the upper mandible is underneath. This being large and strong, soon opens up the circular depression that first called my attention. Before the tide is all out they usually leave because the crustaceans have by this time hidden in the sand.

The Flamingo frequents this coast only during the winter months and consequently does not nest here, nor is it known to nest west of the Andes mountains. Their nests and young, however, have been observed in great numbers in the small lakes of brackish water that abound on the plains of Patagonia east of the mountains. Undoubtedly these are the same birds that spend their winters in Chile, the lofty Andes proving no barrier to their flight. There are many roads by which they can pass, the mountains being intercepted by frequent rivers that empty into the Pacific, and have their origin beyond the snow-covered Andes, in the plains of the Argentine Republic.—J. C. Hambleton in *The O. S. U. Naturalist*.

An Albino English Sparrow.

The European House Sparrow, which is generally known as "English Sparrow," was not known in this country fifty years ago, but today is scattered over our states from the Atlantic to the Pacific and from the Lakes to the Gulf. This detestable little Sparrow has driven almost all our song birds from our midst, such as the Bluebird, Martin and Wrens.

These Sparrows, together with the Bronzed Grackle, have about taken possession of our city. Each evening the air is filled with these blackbirds coming in to roost in the large maple

shade trees that line the streets of our beautiful city.

Everywhere we go, through city or country, we see hundreds of these Sparrows which are a pest to the farmer as well as the citizens of our towns. Among the thousands that we see every day I had never seen an albino, but on last Decoration Day a young man who knew that I was interested in birds came to my house and said that his father had killed a small bird that morning that was pure white, which he had intended to bring in to me but had come off forgetting it. Knowing that it must be a rare bird of some kind, I at once got into my buggy and started for his home, a distance of five miles in the country. Arriving there I was given the specimen, which upon examination I found to be an albino European House Sparrow. It was pure white, not a colored feather on it.

It had been with the "English Sparrows" around the barnyard. I found the bird in a very bad condition as it had been killed with No. 7 shot, but I brought it home, cleaned it off nicely and after a great deal of hard work got a very nice mounted specimen which I now have in my collection.

This is the only pure white albino I have heard of in our state for five or six years. There have been a few noted, but there were none of them, so far as I know, that were pure white. I will not take up any more of your space, but if this letter is of sufficient interest to justify publication will send in a few notes at some future time.

Hoping to hear from any bird students over the country and with best wishes for the OÖLOGIST I close.

G. G. WELSH,
Greensburg, Ind.

The Arctic Three-toed Woodpecker.

In your April issue Mr. C. F. Posson mentions the Arctic Three-toe as a rare species in Western New York, even

north of the 43d parallel. In Michigan this Woodpecker is not rarely found as far south as the 43d parallel and I know it to be a regular resident at 43 degrees, 30 minutes north latitude. I do not think this Woodpecker wanders much and it can generally be relied upon as a resident where found. I have seen this species in Kent and Montcalm counties, Michigan, which are approximately latitudinal with Orleans county, where Mr. Posson's specimens were taken. The Arctic, which is abundant in Michigan north of the 44th parallel is much more generally distributed than its near relative, the American Three-toed, which is exceedingly rare in this state; and I have never met with the latter. H. Nehrling is credited, Cook's "Birds of Michigan", with saying that the American Three-toed is not rare in the Upper Peninsula.

The Arctic is a very retiring species and must be hunted for in the deep woods, and is more frequently found in the pineries. There is no doubt that the nest could be found if the observers of Michigan would make a search in the proper locality in the state.

MORRIS GIBBS,
Kalamazoo.

The Belted Piping Plover.

(*Ægialitis meloda circumcincta.*)

This interesting little Plover arrives here to breed about the first of May, but does not commence housekeeping until the middle part of the same month.

I have found a set of two eggs the 13th of May which I presume is about as early as they commence laying in this locality.

Their favorite nesting site seems to be the barren sandbars in the rivers, although I have found a nest of this species on a sandbar which had quite a growth of young willows.

They scratch several shallow holes in the sand and seem to take possession of the dryest one.

In a dry season they very seldom line their nest but in a wet season they will occasionally line it with pebbles and bits of dried twigs.

I have found them to lay two and three sets in a season, but seldom three except when their nests have been robbed. I have never found the birds setting on their nests, but which I presume they do during the night.

GEO. P. ANDERSON,
Dannebrug, Neb.

Queer Nesting.

On June 4th, last I found a nest of Mountain Quail containing 11 eggs of this bird and 9 eggs of the Ring Pheasant. This is the first time that such an occurrence has come under my observation. The Quail was setting on all the eggs and incubation was about one-fourth advanced. The Ring Pheasant was not about and has not been seen since setting has begun. How the little quail kept possession of her nest is a mystery as the Pheasants are fighters, and generally drive off the other birds.

A. G. PRILL,
Scio, Oregon.

Notes.

If you will observe the Blackbirds when they are giving their call notes you will find that they first ruffle up the feathers or slightly elevate the wings preparatory to issuing the notes. This motion of the wings tends to lighten the weight and the bird rises slightly if upon a slender branch; then a call is given and the bird settles back, dropping to its first position. It is very interesting to observe the flight when the notes of a bird are given on the wing. Notice the flight of the Woodpeckers and the Goldfinch as they utter their notes when on the wing. You will find that the habit rarely varies in any one species of bird.

G.

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OÖLOGY, ORNITHOLOGY AND TAXIDERMV.

VOL. XVIII. NO. 1.

ALBION, N. Y., JAN., 1901.

WHOLE No. 172

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants," "Exchanges" "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

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Examine the number following your name on the wrapper of this month's OÖLOGIST. It denotes when your subscription expired or will expire.

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| 175 | " | " | " | " | Apr., 1901 |
| 180 | " | " | " | " | Sept., " |
| 184 | " | " | " | " | Dec., " |

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A RARE BARGAIN!—One fine buffalo overcoat, price \$100.00. J. W. PRESTON, Baxter, Iowa.

I WILL PAY CASH for heavy marked sets of Red-shouldered and Red-tailed Hawks. If you have such send description and state price wanted. H. C. HIGGINS, Cincinnati, N. Y.

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WANTED AT ONCE.—Osprey Vol. I, Nos. 2, 4; Nidologist Vol. I, Nos. 2, 4, 6; Ornithologist Vol. I, No. 6; Oregon Naturalist Vol. I, Nos. 2, 3, 4; Museum, all Vol. VI; Iowa Ornithologist, Vol. I, Nos. 1 and 4; Vol. II, No. 1; Vol. IV, Nos. 1, 3 and 4; Popular Science News Vol. 32, Nos. 1, 2 and 11; Midland Monthly, June and August, '97, and many others. Will give cash or good exchange in sets and singles or books such as "Tenney's Zoology," "Dana's Geology," etc. ALBERT F. GANIER, Bowmar Ave., Vicksburg, Miss.

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MANY FINE EGGS of this locality, such as Hawks, Owls, Vireos, Flycatchers, Wrens and others to exchange for eggs not in my collection. I will have on hand a great many eggs, both sets and singles, this coming season. All eggs collected by myself are strictly first class and sets are originals accompanied with full data. If you wish to make a good exchange here is your chance. Send list and receive mine. Fair dealing. In exchanging I use Taylor's Standard Catalogue as a basis. ADOLF SCHUTZE, 1611 Sabine Street, Austin, Travis Co., Texas.

TO EXCHANGE.—Over 1000 different stamps including complete set of unused Omaha issue, in large album; some copies of Osprey and about 100 arrow points. For southern or eastern land shells, beetles, good mountable bird skins or Al sets. PAUL B. SMITH, Box 2, E. Cleveland, Ohio.

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TO EXCHANGE.—Sets of 487, 187, 367, 36 for common sets. Have you my last price lists? If not you should drop me a postal at once. I have everything you need. ERNEST H. SHORT, Rochester, N. Y.

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The above prices are per egg, *post-paid*, but smaller orders than \$2 are not desired.

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I send you today some ads for your excellent paper. I must say that ads in your paper all works pay.—CHRIS P. FORGE, Carman, Manitoba.

HEAR YE! Hear Ye! Hear Ye! This is to certify that my advertisements in the OÖLOGIST have paid me better than have the combined ads. in most of the amateur and natural science papers. Ads. in the OÖLOGIST always bring returns, and it is safe to say that there is no paper having three times the circulation of this widespread periodical which can give equal satisfaction. MORRIS GIBBS, M. D., Kalamazoo, Mich

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PLATE HOLDER—Double, 5½x5½, Blair Camera Co., (\$1.00), prepaid 3c. FRANK H. LATTIN, Albion N. Y.

CODDINGTON MAGNIFIER (Miners' glass), diameter ¾in, cost \$1.50, prepaid 95cts. FRANK H. LATTIN, Albion, N. Y.

"SNAPS" for taxidermists. 7in. Stuffers, spring handle (1.25), 80c; Scissor-handle Stuffers, 12in. (\$1.75), \$1.05; Scissor-handle Stuffer, 15in, (\$2.50) \$1.60; Bone Cutters, extra fine and heavy, (\$2.50) \$1.60; Forceps for Insects (\$1.25) 78c; Botanical Collecting Can with shoulder strap, size 12x7½ x3½ in. (\$1.50) \$1.10; Tenaculum or Dissecting Hook, folding in handle (\$1) 28c. All *prepaid* at prices quoted, regular prices in (). FRANK H. LATTIN, Albion, N. Y.

TAXIDERMIST'S OUTFIT:—Contains one heavy Cartilage Knife; 1 nicked and engraved Scalpel with tip shaped for detaching skin, muscles, &c; 1 pair Scissors; 1 pair Forceps; 1 Dissecting Hook; 1 Brain Spoon; 1 pocket Wire Cutter. Instruments best, all packed in polished Hard-wood Case. A *better* outfit than the one always sold at \$3. I have only two outfits and will close them out at only \$2.20 *prepaid*. FRANK H. LATTIN, Albion, N. Y.

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OÖLOGISTS WANTED:—Will pay 50cts. each cash for one of each June 1888, and April 1889, and will give an exchange notice, or coupon good for one, for copies of the January 1895 and April 1899 issue, a notice for each copy. FRANK H. LATTIN, Albion, N. Y.

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NOTICE:—I have retired from the farm and expect to devote more time to collecting. Hoping to hear from old correspondents I am yours DELOS HATCH, Oakfield, Wis.

FOR SALE OR EXCHANGE:—First class sets of 1 1-3, 191 1-4, 142 1-11, 146 1-16, 228 1-4, 273 1-4, 308 1-11, 388 1-2, 387 1-2, 325 1-2, 501b 1-5, 676 1-5, 735 1-6, 751 n-4; several large Bahama Starfish; large collection of foreign stamps. Write what you can offer. GEORGE J. TILLS, Gaines, N. Y.

EGG EXCHANGE:—I offer nicely prepared, authentic sets of the following in exchange for sets I can use: 79a. 93, 107, 116, 266.1, 288, 408, 449, 450, 498b, 520, 549 550, 611.1, 615, 729, 708. In sending list of duplicates it would be well to mention how many of each species you have to exchange as I can use series of most kinds. JAMES P. BABBITT, Taunton, Mass.

FOR SALE OR EXCHANGE, price per set prepaid: Whimbrel 5-4, 48c; Northern Phalarope 5-4, 60c; Red-throated Loon 5-2, 50c; Rich Ptarmigan 5-1,0 \$2.00; Dunlin 5-4, 48c; White-faced Glossy Ibis 5-4, 80c; many others. Send for list. D. WILBY, 27 Front Street West, Toronto, Ont.

FOR SALE:—U. S. large cents, two-cent coppers, different dates, 5 cents each; Indian War Clubs \$1.00; Moccasin, 40cts. to \$1.50 according to size. JNO. J. PRICE, 1322 7th St., Les Moines, Ia.

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THE OÖLOGIST.

A Monthly Publication Devoted to

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TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

Correspondence and items of interest to the student of Birds, their Nests and Eggs, solicited from all.

TERMS OF SUBSCRIPTION:

Single subscription.....50c per annum
Sample copies.....5c each
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FRANK H. LATTIN,
Albion, Orleans Co., N. Y.

ENTERED AT P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

Nesting of the Broad-winged Hawk.

On the 16th of May, 1895, while walking through a grove of oaks on the edge of a marsh and within fifty yards of a small stream, I frightened a hawk from

a nest twenty feet up in the crotch of an oak tree.

I thought it was a Cooper's Hawk, although the plaintive cry it made as it perched among the branches of a tree, one hundred feet away, was new to me. It sounded like "siggee," "siggee," something like a Killdeer, a Rose-breasted Grosbeak or the alarm cry of a Red-wing Blackbird.

The cry was repeated constantly and had a somewhat ventriloquial effect, so that it was hard to tell just where the birds were, especially as they kept pretty well out of sight and did not fly around much.

When I reached the nest I found it to be about the size of a crow's, and built of sticks and twigs, rather clumsily put together, and lined with a few pieces of bark and eight green oak leaves. It only contained two eggs and still thinking the bird to be a Cooper's Hawk, I left it and did not go back until the 20th, when the hawk was again on the nest. As no more eggs had been laid, I took the two, and on blowing found that incubation was about one-third advanced. The eggs are of a uniform dull white, one blotched and spotted at the larger end, and the other at the smaller end, with faint lilac, which has a clouded effect as if it was under the shell. They are rather small, measuring 1.87 x 1.47 and 1.93 x 1.52. After looking up the subject and getting the opinions of other oölogists, I came to the conclusion that they were the eggs of *Buteo latissimus*.

The following year, on May 26th, as I was passing through the same piece of woods, I thought I would take a look at the old nest, and as I drew near a hawk flew from a new one in another tree not

more than 30 feet from the one of the year before. This time I observed the bird closely and saw that it appeared a little smaller than a Cooper's Hawk and had a shorter tail, and was not so noisy and aggressive. It flew into a poplar tree near by, where it was joined by its mate, and all the time I was near the nest they kept up the cry which is distinctive of the species. The nest was about 30 feet up, composed of sticks and twigs, and lined with bark, green leaves and the down of poplar buds. It contained a very handsome set of three eggs, incubation about half done, and measuring 2.01×1.63 , 2.01×1.63 and 1.99×1.60 . They are spotted all over with brick-red spots and dots so thickly that the ground color can not be seen, but the coloring is heaviest at the larger end on one egg, and at the smaller on the others.

I was away during the next three years, but on May 10th of last year, while after a set of Long-eared Owls, within about one-half mile from where I found the nests in '95 and '96, I heard the now familiar cry again. The bird seemed to follow me wherever I went, although I only saw it once, and I could hear its cry for a long time. Taking the hint from the bird's actions, I went to the place where I had been successful before, but though there were several old nests in the vicinity, I saw nothing of the hawk until I had reached the far side of the wood about 300 yards away, when I heard it again close at hand. I looked around for a nest, and at first saw none, but finally discovered what appeared to be an old squirrel's habitation about 15 feet up in the crotch of a large black oak, growing on a narrow neck between two sloughs and with only a few other trees around. As the birds were both on hand sitting among the branches of trees near by, though out of sight, I thought it best to investigate, and with some difficulty on account of the size of the tree, I got up to

the nest. The crotch in which it was placed was formed by the junction of five branches with the main body of the tree and formed a very secure position. It was built on the remains of an old squirrel's nest and was composed of sticks and twigs, lined with pieces of bark, a few feathers, and some green twigs with the leaves on. It measured 14×18 inches in diameter on the outside, was 14 inches deep outside, 7 inches in diameter inside and the hollow was 4 inches deep. It contained no eggs so I left it for a future visit. On the same day as I was pushing my way through an extensive wood of young oak and poplar, which covered the sides of a high hill and was so grown up with underbrush as to be almost impenetrable, I heard "*siggee*," "*siggee*" near by, but could see no bird. I soon found a nest in a small red oak, and then another and another, until I found five, all within fifty yards of the first one, none of them more than twenty feet up, but they all proved on examination to be old ones, so I gave it up for the time being.

On the evening of the 17th, while out for a ride back of Lake Harriet and within the city limits of Minneapolis, and on high ground, mostly under cultivation, I saw a hawk fly from a small grove of oaks, which is about an acre in size and is within 500 yards of Minnehaha Creek.

When returning about dusk, I stopped at the grove and pushed my way through the underbrush to the center of the grove, where I soon found a nest placed about 18 feet up in the forks of a small oak. The outside of the nest was rather loose and scraggy, and spread out so that I could not see whether there was a bird on or not, but a small stick tossed up brought Mrs. Broad-wing off the nest to alight on a tree near by and scold as long as I was near.

The nest was rather wide and the depression very shallow and was lined

with pieces of bark and a few green poplar twigs. The eggs, three in number, are perfect "Red tails" in miniature, one being heavily marked with blotches of red, brown and lilac, one dotted closely all over with minute red dots and the larger end solidly covered with heavy reddish blotches; and the other is encircled with a wreath of light red and lilac around the middle, though slightly nearer the small end. Incubation had just started. Measurements 1.88 x 1.49, 1.95 x 1.48, 1.90 x 1.48.

On the 20th I went to visit the nest found on the 10th, and as I drew near the bird left the nest and being joined by its mate, they flew about making more fuss than any of the other pairs had done.

This time the nest contained three handsome eggs, one of them is speckled with red all over and looks like a Turkey's egg, one is marked with large heavy blotches of red, principally at the smaller end, and the other is marked all over with smaller marks, which are thicker at the small end; measurements 2.05 x 1.59, 2.10 x 1.59, 2.04 x 1.60; incubation very slight. This is a very large set.

I next went to visit the locality where I had found the five old nests on the hill, and as I was approaching the spot I came across another nest which looked older and more dilapidated than any of the others, and was mostly composed of dead leaves, being evidently an old squirrel's nest, but over the top of it projected the tail of Mr. (or Mrs.) "Buteo." The hawk flew off as I started to ascend and lighting on a tree 30 yards away, commenced the usual serenade. The nest was not more than 14 feet up in the forks of a very small oak and was composed of a few sticks placed on the foundation of dead leaves, lined with a few pieces of bark, a few feathers and some poplar twigs with the green leaves and the fuzz from the buds still on them, and measured 18 x 16 inches

in diameter outside, 8 x 7 inches in diameter inside, 8 inches deep outside and 4 inches deep inside. It contained three eggs, incubation begun, one covered all over with brick-red dots so that the ground color can not be seen, and with an almost solid mass of red all over the small end; one marked heavily with brick-red blotches forming a wreath around the small end, and the other clouded and marbled all over with submerged pale lilac; size, 1.84 x 1.47, 1.89 x 1.54, 1.80 x 1.50.

On May 28th while looking for a Marsh Hawk's nest in a large marsh about three miles from Minneapolis, I was surprised to hear the cry of a Broad-wing. There was only one tree near and that was a small poplar that grew on a dry piece of ground 35 yards away, and I finally located Mr. Hawk in the lower branches of this tree and on the opposite side. He seemed to be carrying on an animated conversation with a Red-winged Blackbird, which, alarmed by my proximity to its nest, was uttering cries of distress, which were quite similar to the Broad-wing's. Every time the Blackbird would cry the hawk would answer it, and I presume the latter thought he was making quite an impression. When I tried to get near he flew straight away to a large wood half a mile distant, and I made up my mind that there was a set of eggs in that wood, but as it was getting dark I had to put off searching for them till a later date.

On the 30th having a few hours spare time, I went out to the wood, and after a somewhat prolonged search, as the wood was a large one and the trees small and close together, I found the nest and the hawk flew off. The nest was about 25 feet up in the forks of an oak tree, and was built on top of the dead leaves of an old squirrel's nest and composed of sticks, and thickly lined with green oak leaves; it measured 14 inches in diameter outside, 6 inside, and

12 inches deep outside and 4 inside. It contained two eggs, incubation about one-half done, and measuring 1.88 x 1.57, 1.87 x 1.58. One marked with a wreath of red around the smaller end, and the other with a mass of smaller red spots covering the larger end, and a scattering of dots over the rest of its surface.

On the 4th of June I had occasion to be in one of the railroad yards in the suburbs, when I heard a Broad-wing in a small grove along side of the track. The grove is not above an acre and a half in extent, and on one side is a busy railroad yard and large grain elevator, and on the other a well used street leading to the suburbs and Lake Minnetonka, while the street cars go by right on the edge of the wood. The grove is also a famous hunting ground for the small boy with the air-gun and "Flobert" rifle.

I thought the hawk must be on a hunting trip, for it did not seem like a place in which they would build, but fifteen minutes' search was rewarded by seeing the hawk fly from what seemed to be an old squirrel's nest of dead leaves placed against the trunk of a small oak tree and about 25 feet up. The nest was a flimsy affair of a few sticks placed on a foundation of dead leaves and was lined with a few pieces of bark, a few feathers, (from the bird's tail evidently) some green leaves and fuzz of poplars and a long green weed of some kind (I think it was a "Solomon's Seal") covered with leaves.

The eggs were two in number and incubation was begun. One was marked all over with pale lilac, with a few distinct angular spots of light red, and the other with a few large blotches of red at the smaller end; this egg is irregular in shape and has a distinct crack running clear around it, and a spot where it has been shattered and bulged out, but it has all been healed up again and is as strong as ever. I suppose it must

have been broken inside of the bird and before the shell was entirely formed. Size of eggs, 1.92 x 1.50, 1.90 x 1.48.

This completes my series, altogether, 7 sets of 18 eggs, 4 sets of 3, and 3 sets of 2.

I think I could have collected a good many more this year if I had had time, as I found them in every suitable wood in which I searched, and every time I heard their call I found their nest without difficulty. I shall not disturb them any more this season, but next year I expect to take a set from each nest visited as here described.

These sets were all collected within a radius of five miles from the center of the city of Minneapolis and two were within the city limits.

JOHN D. CURRIE,
Minneapolis, Minn.

Bird Music.

[Continued from last issue.]

Another bird that sometimes sings on the wing, is the White-rumped Shrike. It is not generally known that this Shrike, or for that matter any other, has a song. I have heard the song several times and can testify to a series of very agreeable notes nicely modulated. We cannot call the song really melodious, but it is still possessed of uniqueness, as it is essentially unlike the notes of any other bird of my acquaintance. I once heard this Shrike sing as it flew in the characteristic manner of flight-singers, on fluttering wings.

The true love-song of the Golden-crowned Thrush or Oven-bird has been but rarely referred to by writers, in fact, the best musical efforts of this species have only been described in comparatively recent times. The common loud clanking chirpings, so often heard, have been listened to by all observers, but a superior strain, only occasionally uttered, has been listened to by but few intelligently. I feel safe in

saying that no bird among us which is so well known, has eluded the observers of bird songs as this one has done.

I listened to the love song of the Oven-bird for the first time in 1880. A burst of melody reached me in a dense piece of low woods, well filled with underbrush, and the delightful notes were surprising and doubly pleasing to me in this location. At first on hearing the song the idea presented itself that a species new to me was singing, and my extreme care in reaching the glade in hopes of securing a note, procured me a chance of witnessing a most singular performance. Crawling through the brush I came to a partial clearing, over which a bird, evidently in the highest transports of joy, was fluttering in irregular flight. It is not surprising that I failed to recognize the performer in this, to me, unusual aspect, for there was not a feature in its notes or movements in which it resembled its ordinary and understood habits.

Observing another bird, evidently a Golden-crowned Thrush, and its mate, perched on the ground near, and which appeared to be the center of attraction to the delighted warbler overhead. I quietly awaited the movements of the pair. Never had I heard this song before and never had I witnessed such a scene. This was indeed, making love with a spirit not often witnessed among our warblers.

This song was almost continuous, that is, together with the interruptions of the more subdued call or conversation notes, and the common chattering notes, so well known and described by Coues as a harsh crescendo, and was largely of the most melodious strains.

The energetic, unconscious fellow was in the meantime consistently flying above his innamorata, describing nearly every form of flight except sailing. First dashing to the edge of the glade, then rising to the tops of the bushes he

would flutter almost directly upward as we have often seen the European Sparrow or House Wren do, and reaching a height of twenty feet or more, would flutter toward his mate, or dash about the clearing in varying evolutions almost constantly singing. She, in the meantime sat silent, and probably interested in the performance. The appearance of a third party on the scene, undoubtedly also a lover, caused the ecstatic singer to dash into a bush.

This song ecstasy is rare, as it is also the much simpler one of the Grass Finch or Vesper Sparrow as it is called, which also goes into a rapturous song-flight occasionally. The Finch rises into the air fifty feet or more but not as rapidly as the Bobolink, and generally settles back near to the point from which it took its flight. The Bobolink sings as well when perched as in its flight, though not so continued, but the Grass Finch's song when on the surface is very commonplace, while its flight-song like that of the Oven-bird, is superior.

A number of species of birds embraced in the systematic division of, are known to utter their notes on the wing, and from the Crow to the Martin, which is the nearest to a musician among the Swallows, there are many which give their best efforts while flying. Among these is the Prairie Horned Lark, which comes very near to being a singer, and which has a flight of special interest; still these efforts are not sufficiently musical to entitle the birds to rank in this list of musicians as accepted by critics.

It will be observed that a tremulous motion of the wings almost invariably accompanies song flight. We may maintain, then, that the quiverings of the wings is an accompaniment to the song is a strictly seasonal feature. All have noticed the loss of the song synchronously with the skyward flutter in the case of the Bobolink, when he assumes his summer dress and leaves for

the South to become the plebian rice-bird. I have yet to hear a bird sing on the wing in autumn.

MORRIS GIBBS, M. D.,
Kalamazoo, Mich.

(To Be Continued.)

Winter Bird Notes From California.

One of the most abundant winter residents of Santa Clara Co., Cal., is the Western Robin (*Merula migratoria propinqua*). He is regarded by the ranchers of Santa Clara Co. as a good weather prophet, although I could never confirm their belief. When the Robins arrive in force in the fall, the farmers prepare for heavy winter rains, and when they are scarce it is said to indicate a dry season.

Although we have a county game law protecting this bird, they are nevertheless killed in considerable numbers by the small boy, Italians and other foreigners, but I think that in the last few years the farmers are more and more coming to realize the need of protecting this and other beneficial birds. Just recently I have heard of several parties who intend to make an example of any one they can find shooting Robins, and I hope that before long something will be done to enforce the law. At any rate, the Cooper Ornithological Club will soon have a law pass, in the state legislature, unless something unexpected happens, which will protect all the song and other birds at all seasons of the year, and which, if passed, we members intend to see enforced.

The Robin arrives with us about the first of October and remains until March. They are more or less gregarious, a flock usually containing about fifty birds, although I have seen flocks which, no doubt, held several hundred.

The Varied Thrush (*Hesperocichla naevia*) arrives about the same time that the Robin does, but is not nearly so common. They are of a retiring dispos-

ition and favor a location for their winter home, which contains a number of thick cypress, pine or other thick trees or shrubs, usually near some house, where they are quite content to remain in the seclusion thus afforded until it is time for them to again journey to the thick spruce woods of British America or Alaska, to their summer home.

Another common winter resident is Audubon's Warbler (*Dendroica auduboni*). Most of their time is spent in the orchards, vigorously searching, with many a sharp "chit," for insects and other food. They arrive about the first of October, and are abundant from this time till the last of February. When they first arrive they are changing from the summer to winter plumage, and some of the specimens taken at this time are very interesting.

In this locality I have made an observation which may, perhaps, help to prove that the sub-species of Audubon's Warbler, described by Mr. Robert McGregor, of Palo Alto, and named Hoover's Warbler, (*Dendroica coronata hooveri*) shows a constant variation. Mr. Grinnell found Hoover's Warbler abundant and nesting in the Kotzebue Sound Region of Alaska, (see Pacific Coast Avifauna No. 1, p. 55) but found no Audubon's Warblers. Now, our Audubon's Warbler, which nests in California, arrives here in the fall about the middle of October, but I have never noted Hoover's Warbler before late in December. This would help to prove that they are a distinct sub-species, whose summer home is Alaska, and the long distance they have to travel will account for their delay in arriving in the winter.

A very modest, though interesting bird is the Dwarf Hermit Thrush, (*Turdus aonalaschkei*) which is fairly common in our locality in the winter time. He is generally not a very sociable fellow, always traveling by himself through our gardens and feeding upon worms

and other insects. I have often felt sorry for him, he seems so lonely, but I presume he does not mind it.

The Cedar Waxwing (*Ampelis cedrorum*) is an irregular winter visitor with us, coming in flocks of from about twenty to perhaps one hundred. They feed on the seeds of the locust and pepper trees, which are quite extensively grown for shade trees in Santa Clara.

Has the Mockingbird (*Mimus polyglottus*) ever been recorded in Santa Clara Co.? I have never seen a record of it, although I know they occur in winter in Alameda Co., which is next to us on the north. My first record was on the 23d of Jan. 1899, when I saw a male Mockingbird near a residence in a large garden near Santa Clara. I was told he had been around the place for several weeks. Since then I have recorded them as follows: Feb. 9, 1900, female, seen in a garden in Santa Clara; Feb. 13, 1900, male, bird noted in a garden near a house two miles west of Santa Clara; Oct. 12, a pair, male and female, seen near the place I saw a bird Feb. 9, 1900, males singing. From these records I conclude that the Mockingbird is rather a common straggler to our county in the winter time.

Our winter Sparrows, Gambel's (*Zonotrichia leucophrys gambeli*) Intermediate, (*Zonotrichia l. intermedia*) and Golden Crowned (*Zonotrichia coronata*) all arrive about the first of October. The Whited-crowned Sparrow (*Zonotrichia leucophrys*) arrives several weeks later. They all congregate in large flocks in the hedge rows and brush piles where they spend a very merry and sociable winter. These birds are all very much despised by the orchardists, for in February and March when the fruit blossoms are beginning to come out, they form the chief article of diet for these Sparrows. The destruction that a flock of these birds can do in one day is something enormous.

In the winter time our Finches all

congregate in flocks, it being no uncommon sight to see a flock of House Finches (*Carpodacus mexicanus frontalis*), Lawrence's and Arkansas Goldfinches (*As-tragalinus lawrencei* and *psaltria*), which will contain several hundred birds.

After the first of October we always have with us the American Pipit (*Anthus pensilvanicus*) in abundance. They feed in large flocks in the grain fields and orchards, delighting particularly to run after a plow and pick up the worms as fast as they are turned up. The majority of them leave about the first of April, although I have one record for four birds noted on the 24th of April, which I consider a very late date for them.

I think of all our resident birds in winter the California Bush-tit (*Psaltriparus minimus californicus*) is, perhaps, the most interesting. They congregate in small flocks and will search a garden so thoroughly, investigating all the trees and shrubs, that it has to be a very smart spider who can escape with his life. They are such dainty little birds and are so fearless that they always draw my attention, and I consider it a great privilege to watch a flock of them "do" a peach tree in our back yard.

This is a very incomplete account of some of our winter birds in their chosen homes, but as time is pressing I must desist. Would time permit, I might enumerate the Chickadees, the dainty Kinglet, both species of which are common winter residents, the Woodpeckers, Jays and many others, not omitting the infernal, and ever obnoxious English Sparrow.

This paper is merely intended to show our eastern brethren something of our abundant bird life in winter, as well as in summer, for we can study birds almost as diligently in winter as in nesting season, and it is but a poor ornithologist who cannot enjoy the birds unless he is despoiling them of their most precious treasure—their eggs.

WILLIAM N. ATKINSON,
Santa Clara, Cal.

The Use of Old Nests.

It is a strange economy of Nature, which impels Hawks and Owls, to use old and unattractive nests, when but little energy need be expended, in the construction of new abodes, when each would then build, and differentiate, according to his specific instinct.

April 18th. 1895, we saw an *Accipiter cooperi* nearby a nest which was just begun, and concluded that she was constructing same. May 5th, the nest was completed, and on May 19th, we took therefrom a set of five slightly incubated eggs. The nest was typical of the species, very bulky, composed of small sticks and lined with the outer bark of chestnut in chunks from two to five inches long, and from one-half to one and one-half inches wide. It was placed in the crotch of a tall, slender chestnut tree, fifty-five feet from the ground. In 1896 this nest was occupied by a Barred Owl, which hatched its clutch there. When we visited the site April 12th, the shells, strewn about the base of the tree, appeared as if the young had been hatched a day or two previously. The nest appeared, from the ground, as if some inner bark and leaves had been added since it was occupied by the Cooper's, but I think this was probably done by squirrels, during the preceding Fall, as I have never known the Barred Owl to do anything toward building a nest, or fixing over an old one. They appear to be satisfied with what they can find. We again visited this site, in the Fall of '96 and saw by the numerous tracks about the tree, that the nest was occupied, but, by what we could not make out, as the tracks were strange to us. A charge of shot into the nest brought down a pair of old, and four young, white-footed mice. This ended the history of that nest, as it was blown down the following winter.

April 21, 1896, and April 11th, 1897,

we collected sets of four Red-shouldered Hawk's eggs from a nest in the crotch of an oak tree, forty-one feet nine inches from the ground. The nest was a typical *Buteo's*, made of large sticks and containing much inner bark. In '98 the Red-shouldered Hawk did not appear but a pair of Cooper's added to the top a few small branches, and reared their young there. During the winter of 1898-1899 this nest was blown down. Last spring the Cooper's Hawks built a new nest, whose history we spoiled by removing it entire, together with its complement of three incubated eggs, to our den.

In 1897, on April 20th, we located nests of the Red-shouldered and Cooper's Hawks, which were not more than two hundred feet distant from each other. These were both of the build of '97 and were typical, each, of its species. The Red-shouldered's nest contained two slightly incubated eggs, which we took. The nest of the Cooper's was just completed. On April 30th, we took a set of four fresh eggs from it. Visiting the locality after Chickadee's eggs on May 12th, the same year, we were surprised to start a Cooper's Hawk from the *Buteo's* nest. A climb to the nest showed that every vestige of the inner bark had been removed. A few small sticks had been added, and the nest relined with outer bark. The nest contained three eggs of the Cooper's. One of the eggs looked as if it might have been deposited many days before the other two, as it had lost all its bluish tint, and otherwise appeared to be highly incubated, while the remaining two had the appearance of being perfectly fresh. We believed, and still do, that this faded egg was part of the first set, which had been taken before it was completed; so we decided to take the set to see if this would not be evidenced by the different stages of incubation. But, on blowing, it proved no different from

the others, all showing incubation had just commenced. Neither of these nests have since been occupied.

April 25th, 1897, we found a nest which had every appearance of being occupied by a Red-shouldered Hawk, very large sticks, inner bark showing prominently, and a pine branch here and there, about the top sides. It was situated in the fork of a large branch, which sloped away from the trunk of the tree, and was forty-two feet from the ground. The bird left the nest when we were about fifty feet from the tree, and almost the same instant, a full grown gray squirrel sprang from the under part of the nest, ran over it, and flattened itself against the tree, a few inches above the nest, and there remained until we began the climb. So astonished were we at seeing a squirrel jump from the very nest of a Hawk, that we paid little attention to the bird, and were very much surprised upon reaching the nest, to find that its occupant was an *Accipiter cooperi*, instead of a *Buteo lineatus*. This nest contained both the inner and outer bark of the chestnut. It was placed in such an unfortunate position, that it was with great difficulty we succeeded in collecting the three fresh eggs which it contained. The position of the nest was so trying, that when the eggs were taken, we could not wait to examine the nest sufficiently to assert positively that it was a combined nest of the squirrel and the Cooper's. I do not dare to state the manner in which we got the eggs down from this nest, for when we told the story at home that evening, we were immediately branded as worthy disciples of Ananias, and since then, whenever an improbable story is heard, some one is sure to suggest that we can tell a pretty good yarn about how we procured a certain set of Cooper's Hawk. But though the set is, we fear, incomplete it is on account of its association, prized most highly. It was not

occupied in the spring of '99, but last fall my brother shot a gray squirrel from the tree which evidently made the nest his home. We have no doubt but that this nest was built and first occupied by a Red-shouldered Hawk, then occupied by a Cooper's Hawk, and during the winter and perhaps a part of the spring, was occupied by squirrels. The fact that it contained much inner bark when it was occupied by the Cooper's suggests the idea that the Cooper's Hawks may have driven the Buteo away from the nest, after she had prepared it for occupancy in the spring of '97, for during the whole of that spring the Buteos were in the grove, but did not nest there. We have no knowledge as to which of these species is considered the stronger.

In 1898 we took a set of Red-shouldered Hawk's from a pine tree. Typical nest, forty-six feet, six inches from the ground. In April, 1899, we took from this nest a set of three eggs of the Barred Owl. The Owls used the nest just as they found it, without the addition of a stick or a bit of bark.

The last nest which my note books show was used by different species, was a nest built and occupied by a Cooper's in '98. This nest was fifty feet from the ground, in the crotch of a chestnut tree. A pair of Red-shouldered Hawks appropriated this nest in 1899.

JOHN H. FLANIGAN,
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| California Bush Tit 1-7..... | 35 |
| Prothonotary Warbler 1-6..... | 50 |
| Yellow Warbler n-4..... | 25 |
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VOL. XVIII. NO. 2.

ALBION, N. Y., FEB., 1901.

WHOLE NO. 173

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| 175 | " | " | " | Apr., 1901 |
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* The Birds of Michigan and Their Protection.

Members of the Agassiz Ass'n:—

I am requested to address you on the

subject of bird protection, and gladly accept your kind invitation. For the purposes of the present discussion, birds may be divided into two classes: First, game birds; second, birds that are not considered game. By game birds I mean edible birds, the pursuit and taking of which affords sport for the gunner. There are several species of birds, however, that are edible and that never should be killed by sportsmen because of their beauty, or their quality as songsters, or their value to agriculture as insect eaters. The birds which may be properly classed as game birds, and which are found in your state are: Web-footed wild fowl, the Grouse family, the Sand pipers, the Plover family, the Snipe family, the Quail family, the Curlew family.

The Wood Duck is usually classed as a game bird and is eagerly pursued by sportsmen, but as a matter of fact, it should never be killed. Within the past few years it has become exceedingly rare and is threatened with early extinction. Still it is one of the most beautiful plumage birds on this continent. Its economic value as an article of food is so small that it should never be hunted or shot at by any true sportsman. I hope to live to see the time when all states will have laws protecting the Wood Duck, for all time to come.

In fact, all migratory water fowls are threatened with extermination and unless all states and all Canadian provinces speedily enact and enforce pro-

* A paper addressing Chapter 176 Detroit B., Agassiz Ass'n.

tective laws, a dozen species of ducks will disappear from the continent within ten years. Under present conditions the Indians in the far North hunt the nests of the mother birds and destroy the eggs by thousands. Almost as soon as the young are hatched, and before they are able to fly, these savages pursue and kill them with clubs. A native will eat at a single meal, a dozen young wild geese, none of which are perhaps larger than his fist; while if they were let alone any one of them would make a good, square meal six months later.

As soon as the young water fowls are able to fly they, with their parents start on their southern migration. When they cross the border into Michigan, Minnesota, N. Dakota, Montana, or Washington, an army of sportsmen assail them. As the winter season advances, the birds move south and at every stopping point they encounter a new division of this army of shooters. Even when they reach their winter feeding grounds, about the Gulf of Mexico, they are still pursued and slaughtered.

A still more savage enemy greets them at the International boundry. I refer now to the market hunters. These men move south with the birds, clear into the gulf states; camp with them all winter and then follow them north to the International boundry line again on the spring flight.

A game dealer in Chicago, for instance, receives a shipment of wild geese and ducks from a market hunter in Minnesota or N. Dakota in August. In September he receives another shipment from the same man 100 miles farther south. He keeps on receiving daily or weekly shipments from this same man, clear down from the Mississippi Valley into Louisiana or Texas, all through the winter. Then the shipments begin to come from a point farther north and continue with unceasing irregularity through March,

April and up into May, the last shipment coming again from N. Dakota or Minnesota.

Is it a wonder therefore, that between the warfare kept up by these sportsmen and their gorilla allies, the water fowl should steadily decrease from year to year? The wonder is that they have been able to withstand these terrific onslaughts so long. It is only because they are such prolific breeders, and in spite of this they are doomed, under the existing circumstances. The remedy is for shorter open seasons. These should be limited to 30 days.

Second: The season should open on the same day and close on the same day in all states within given parallels of latitude. For instance, in all states north of the 40th parallel the season should open Sept. 1st and close Sept. 30th. In all states south of the 40th degree, and north of the 35th degree, it should open Oct. 1st, and close Oct. 31st. In all states on or south of the 35th parallel it should open Nov. 1st and close Dec. 31st. I would accord the extra 30 days of open season to the Southern states because in some seasons the water fowl would not reach these states until late in November, or even in December.

Third: All states should pass laws limiting the bag for any one shooter to ten ducks and three geese for any one day, and to fifty ducks or fifteen geese for any one year.

Fourth: The sale of game of all kinds should be rigidly prohibited at all times. The broad principle should be established that game is and should be the property of the man who can go afield and kill it. He should be permitted to give to his friends, to a reasonable extent, but not to sell to any one.

Fifth: A rigid and impartial enforcement of game laws everywhere and at all times.

Much that has been said as to the

protection of water fowls applies with equal force to all birds of the Grouse family, to Woodcock, Quail, and to the Snipe and Plover families.

Laws should be made to open on all kinds of game on a given day and close on all kinds 30 days later, and the man found in the woods, in the fields, or on the waters with a gun, at any other time of the year, that fact should be considered *prima facie* evidence that he has violated a game law or is trying to do so, and he should be liable to a fine of not less than \$10 on conviction.

The following species are habitually pursued by many sportsmen, but are not game birds, and (with the exception of two species of Hawk) should never be killed: Hawks, Owls, Blackbirds, Gulls, Pelicans, Cranes, Loons, Ibises, Egrets, Cormorants, Bitterns, Herons, Doves, Eagles, Woodpeckers, Robins, and Meadow-larks.

Much that has been said as to the protection of game birds applies with equal force to song and insectivorous birds. Many of these are killed and eaten—not, I am glad to say, by real sportsmen, but in many cases by men who pose as such. The greatest enemies of song, insectivorous and plumage birds are the Italians and other foreigners who live in the great cities. An army of these men go out of every great city every Sunday morning during at least eight months of the year with cheap shotguns, and kill every bird they can find, no matter of what kind. Robins, Thrushes, Orioles, Tanagers, Blue Jays, Pewees, Song Sparrows, Blue-birds—all go into the Dago's bag; then into the pot and from there into his rapacious maw.

Many states have enacted laws prohibiting the killing of song birds at any time of year, but unfortunately such laws are not enforced as they should be. The remedy for this lies in a greater number of game wardens and of more vigorous action on the part of all bird

lovers. There should be at least one in every county of this state, and if one could be provided to each township, so much the better. The minimum fine for killing a song bird or an insectivorous bird should be \$25. Half of this should go to the game warden, and in addition he should be paid a salary which would warrant him a comfortable living.

Another great enemy of song birds, and especially those classed as plumage birds, is the market hunter. This man kills and skins the small birds for millinery purposes. He also kills thousands of plumage birds, such as Egrets and Ibis and plucks a few plums from each and leaves the bird to rot. In many cases he kills the mother bird and a brood of young are left on the nest to starve to death. All this infamous traffic should be suppressed, as speedily as possible.

All states should prohibit the wearing of skins or plumage of birds on hats. A few of the states have already passed laws to prohibit the killing and selling of such birds for such purposes, but this does not cover the case. The way to remedy an evil is to strike at the root of it. Let us destroy the market for bird skins, and bird feathers, then the vandals who are slaughtering these birds finding their occupation gone, will have to go at something else. If they are too lazy to work, let them go to stealing horses and they will soon land in the penitentiary, where they should have been long ago.

Let it be considered the duty and the privilege of every friend of bird protection to condemn and decry, at every opportunity, the habit of certain women of wearing bird skins or plumage on their hats. The only hope of saving from total extinction the many species of birds in this country, lies in the rapid creation of a strong public sentiment against the millinery traffic in bird skins.

This warning is not the result of im-

agination or of speculation. It is the result of a careful and thorough study of the subject extending over a period of 30 years. I have travelled over nearly every state and territory in the Union, and have personally seen the Prairie Chicken and the Wild Turkey swept almost entirely from the great state of Illinois. I have seen the Ruffed Grouse and the Quail almost entirely wiped out of the state of New York. I have seen the Woodcock driven to the verge of extermination throughout all the New England States. I have seen the Wild Pigeon swept from the whole United States and I have seen practically all species of birds reduced in numbers from 25 to 50 per cent. all over the continent.

It was principally and primarily for the purpose of arresting this terrible slaughter that the League of American sportsmen was organized. Men, women and boys are eligible to membership in this League and all such who are at all desirous of seeing the beautiful feathered creatures remain on earth, should join the League at once and aid us in saving them.

G. O. SHIELDS,
New York City.

Bird Music.

(Concluded).

We have no regular night singers in the Great Lake Region, so far as I am able to learn, and in this respect America does not equal England, which has several nocturnal songsters, one of which excels as a musician. The famous English naturalist, Gilbert White, records three species which sing at night in the British Isles. They are the Reed Sparrow, which sings among the reeds and willows, the Woodlark, singing in mid-air, and the Nightingale, as Milton describes it,—

"In shadiest covert hid."

There are several species of owls

which roll forth or screech out their notes at night, and also numerous shore birds and water-fowl that issue their varied calls, and, especially these latter are partial to night travel, spring and autumn. Then too our Whippoorwill confines his singular but monotonous jargon to the hours of darkness, while the scream of the Nighthawk more often breaks on the ear between the setting and rising of the sun. But these birds are not strictly speaking, songsters, although their notes undoubtedly fill their requirements as to harmony and expression.

The plain, domestic little Chipping Sparrow sometimes favors us with its simple chatter in the darkest night. The notes hardly deserve the name of song, but heard issuing from the surrounding gloom, the simple refrain commands our attention from its oddity at the unusual hour. The Wood Pewee not rarely quavers forth its plaintive offering, sounding in the depth of night like a wail from a departed spirit. This favorite songster is a remarkably early riser, as he is also late in going to rest, and I have sometimes thought that his musical efforts at night were the result of an error on his part—an idea strengthened by the fact that the notes are rarely heard more than once or twice during the night, and moreover the song is only occasional, and only in the nesting season.

Other species which are heard to burst forth in ecstatic melody, are the Swainson's and Hermit thrushes. If I could describe the songs of birds, so that other bird-lovers could understand them as I do, I would feel that a partial acknowledgement had been made to the divine melody issuing from these bird's throats.

The Cuckoo also sings at night, or at least bubbles out its peculiar emphasised jargon, and which is called a song out of courtesy rather than from any real merit. Both species, the Black-

billed and Yellow-billed cuckoos favor us, but the former is more abundant.

We often hear that the best singers are the ones of plainest dress, but this is assuredly not so in all instances. If one is permitted to listen to the sweet refrain of the Scarlet Tanager in the night, it will be acknowledged that the brilliant coat of the songster does not compare in point of excellence to the owner's divine song.

These birds are the only ones at the north that I am acquainted with that sing during the hours of darkness, and not one of them is a regular singer in the night. Information has reached me from no less an authority than Mr. Robert Ridgway of Washington, to the effect that the Yellow-breasted Chat is a performer in darkness.

Among birds, the females do not sing, and although many species have musical call-notes and agreeable tones in conversation, which are shared in by both sexes still the true song is only rendered by the male bird. I am sincere in saying that the lady bird talks more than her mate about the house, but I will admit that when away from home she is very discreet in this respect. In attending to her duties of incubation she is very quiet, and it is seldom that a note is heard from her while on the nest. It has been said that all birds are silent when incubating, so as to avoid observation, though most species are quiet when setting, there are a few which chirp loudly when so engaged, and some even burst into exuberant song.

Few observers are aware how assiduous are the attentions of the two birds to one another during incubation, and the credit which is due to the father-bird in his devotion in covering the eggs in his mate's absence is not allowed him.

Of course, when a bird is heard singing on the nest we know that the notes come from the male, but many young

observers are inclined to attribute it to the female. Another source of error in failing to identify the sex occurs with those species in which the male assumes the plumage of the female until the second or third year.

The Chipping Sparrow sometimes sings his chattering refrain while upon the eggs. Yellow Warblers are not rarely heard singing from the nest, but one has to wait patiently in a neighboring copse, at the proper season, in order to see, hear and be convinced.

I have once heard the Maryland Yellow-throat's song from its concealed nest in the grass; in fact I found the nest, from hearing the peculiar notes, almost at my feet. Several times the song of the House Wren has reached me, coming from the cavity where the old bird was setting solacing himself in his cavernous nesting spot.

Once, each, I have heard the notes of the Black-billed Cuckoo, Scarlet Tanager, Orchard Oriole, Goldfinch, Rose-breasted Grosbeak, and the Hermit Thrush, the latter the only thrush whose song has positively reached me from the nest. One would think that the Brown Thrush, Catbird, and Robin, as great singers, would burst forth on the nest, but it must be borne in mind that these thrushes prefer higher perches for singing, while the Hermit is a ground nester and often sings on the ground.

But of all the species which are musical while setting, the Warbling Vireo heads the list, both for persistence and for beauty of song, according to my note-book. Anyone can listen to the song of the Warbling Vireo on the nest if the trouble is taken to find a nest with eggs in May or June. For when the mate takes his trick keeping the eggs warm, he cheers himself, and enlivens the surroundings by pouring forth his rippling, inspiring melodious warble. I have heard him sing from the nest in early morning; in the hot-

test part of the day, and in the early twilight, and I have heard him issue as many as twenty bursts of song during one spell on the nest, and have discovered the nest on more than one occasion by the sweetly modulated tell-tale song.

These species are all the birds I have found to sing while on the nest.

MORRIS GIBBS,
Kalamazoo, Mich.

Field Notes from Manitoba.

While reading the articles in the Jan. 1901 OöLOGIST I noticed an article on the use of old nests, which suggested to me, adding a few notes on my experience regarding the use of old nests by Hawks and Owls.

Before I became a resident of this glorious western continent, from my early boyhood days, I could find no greater enjoyment than a ramble in the woods, lanes and fields of old England, and I found many a set of Sparrow Hawk, Kestrel and one each of the Merlin, Hobby and Long-eared Owl. All these gala days are as fresh in my memory as if they had happened but a week or so ago, and I well remember with what joy I returned home with my first set of four beautiful Sparrow Hawk's eggs taken from a nest in a larch (tamarac) wood. How long I watched that nest. Five weeks elapsed from the time I found it until I finally brought home the set of four eggs. The nest was built by the birds themselves and was a large flat structure of larch twigs in a shallow depression of which lay the prettiest set of Sparrow Hawk's eggs I ever was fortunate enough to find. Many a set of Sparrow Hawk's eggs I took after that but I never got another set one-half so handsome.

Again, quite fresh in my memory is the chalk quarry in Lincolnshire where I flushed a Merlin from her nest on my return home from a day's collecting,

and how on the following evening with my brother and an oölogical friend and a wagon rope I came back determined to add to my collection a new species of eggs. The rope made fast to a stake well driven in the ground I descended and there in a slight depression on a ledge in the chalk cliff resting on a bed of a few blades of withered grass I espied a lovely set of five Merlin eggs.

On another fine May day I visited a larch wood at a distance from home, and in a tall pine from the very top I took from a Crow's nest I had robbed but two weeks previously a handsome set of Hobby's eggs and in descending unfortunately broke one of them.

But it is about the nests of our own Manitoba that I intended to write so must forget for the present these pleasant memories of boyhood days. It was on the 15th day of June, 1887 that my residence in the great West commenced, and I at once began to investigate, although only in the last two years have I been able to make a specialty of oölogical research.

The first nest of the Red-tail I found was found that summer. It was the 1st of July and three well fledged young birds were its occupants. The nest was in a small oak 25 ft. up in a main fork of the tree but I could not tell if it was new or old as it had been occupied so long. The next nest of this species I examined was in a lone thorn tree way out in the boundless prairie miles from any bush on the side of a creek where the birds lived royally on the marsh birds that abounded on the creek and in the neighboring swamp. This nest also contained three well fledged young, and was used year after year for four years to my certain knowledge. This was from 1890 to 1894, the last time I was at the place. I intend to visit this place the coming spring to see if the Hawks are still breeding there.

In the spring of 1893 I went for a ramble in the woods west of Carman.

It was the 1st of May, and in an old Red-tail's nest on an overhanging limb of a large oak tree near a shallow creek I found a family of Western Great Horned Owls. There were three of them and I took them all. All were different in size; I kept them for two months and got some very interesting notes regarding them. I then gave them their liberty. On the 15th of May the same year I took three Red-tail's eggs from this nest. It had been slightly repaired and a few green leaves added.

But I must pass on to the past season and describe some of the takes noted down during the months of April, May and June.

My first find was on April 6th (this is very early here) in heavy oak bush at Salterville amongst scattered trees. On the outside of the bush I located a nest of Krider's Hawk. This was an old nest and has been used for three successive years. On April 2d I had taken two Western Great Horned Owl's eggs from this nest. The nest was repaired and a lining of bark, grass and leaves added. It was between 35 and 40 feet up in oak tree on side branch on a large flat fork.

On May 4th, in light oak and poplar bush on side of Boyne river three and one-half miles east of Carman, returning from a collecting trip I found a Red-tail's nest in a large oak. This was on side branch, hard to reach, but I got to it after some hard work and took therefrom three handsome eggs. The nest was quite new, large, of sticks and twigs, lined with bark, leaves and grass, and was placed about 30 feet up. On the same date I got another set of three Red-tail's eggs. The nest was in a small poplar tree in a poplar bluff only 18 feet high. The nest was the largest I have ever seen. It measured 3 feet in height and $2\frac{1}{2}$ across, was a mass of large and small sticks and twigs of poplar and willow and was

built on top of an old Crow's nest. The depression was 9 in. in diameter and quite shallow and sparsely lined with bark, leaves and stubble. I could see this nest from either north or south at a distance of over two miles.

On May 6th I took another set of three. Nest in a tall oak 30 ft. up in main fork, medium size, built of sticks and twigs and lined with bark and grass. This nest was new and although there were old nests in the immediate vicinity of this new one the birds seemed to prefer to construct their own.

Next date, May 7th, west of Carman I got another set of three. This nest was in an oak, one of a clump of three in poplar woods. Nest was about 30 feet up in a fork on trunk and was new, was built like others of sticks and twigs and lined with grass and bark shreds. The eggs were nicely marked.

On May 12th a set of two eggs was taken from a poplar 25 ft. up in heavy poplar woods northwest of Carman. This nest was situated 25 ft. up, close to trunk, made of poplar and willow sticks and lined with grass and bark, was of medium size and new. In this case there were several old nests handy but the birds seemed to prefer to make a new structure.

I see I have missed one nest, date May 9th. This Red-tail's nest was in a tall oak tree 40 ft. up, the tree being in an oak grove and situated on bank of ravine which seems to be a favorite location, placed in a fork near top of tree on trunk, was a large coarse structure of sticks and twigs, lined with bark, leaves and grass and contained three eggs. This also was a new nest.

A second set of two eggs taken on May 12th was taken from a large and conspicuous nest in a poplar tree 20 ft. from ground, the nest composed of sticks and twigs, was lined with poplar bark and a little dried grass and was of this season's construction like one previously mentioned. There were a

number of old nests in the immediate vicinity of this nest which the birds might have used.

A third set of Krider's, two eggs, taken May 12th was taken in the same locality, locally known as "the poplars;" a large tract of wooded country, covered with willow scrub and poplar trees. This nest was in a poplar tree 25 ft. up in main fork, nest of medium size, of sticks, lined with leaves and grass with few strips of poplar bark and was a nest of the year, evidently built by the birds themselves. Old nests abound all through this district, but I found none of them occupied.

On the 14th of May I again visited this district and took a set of two Red-tail's eggs. This nest was placed in a tall dead poplar about half burned through at the bottom and I was afraid to climb it at first. However I made up my mind to try it when the female left the nest at my near approach, as I knew there was something to get, and succeeded in reaching the nest and returned to terra firma without mishap. The wind was strong and cold and from the north and a cold rain made this a very unpleasant task. This was the second largest nest of the season and was built on the top of an old one. The nest projected so far out around the fork in which it was placed that I had trouble in reaching over it and was 30 ft. high. The nest was composed of large and small poplar sticks, many of them being charred by the fire that had passed through in the fall. The nest was lined with poplar bark, grass and a few green leaves. The nest was quite close to the railway track.

On this day I took another set of two while going home, from dead poplar, 28 ft. up. This nest was also large but not as large as the other, of sticks of poplar, lined with bark shreds and leaves. A few feathers also were used but I think these are accidental. This also was a nest of the season.

May 16th visited Jickling's marsh which lies in the poplar belt. I took from a large nest in a poplar tree 35 ft. up in main fork, a set of two eggs. These were small, the smallest measuring 2.20x1.65 and were well marked. This nest was new, although situated quite close to nests built the previous year, was like the rest, of sticks, mostly poplar, and lined with bark shreds and roots, grass and leaves.

On May 17th a set of two eggs rewarded my search. These were Red-tails, the nest in a poplar tree 25 ft. up, of sticks and twigs, lined with grass and fine roots, was of large size and new. A second nest found the same day contained a set of three eggs, was in a tall and spreading Balm of Gilead tree, 25 ft. up, in main fork, was large and new, composed as were all the others found in this bush, of poplar sticks, lined with bark, grass and leaves. As I watched the old Red-tails circling above I glanced around the neighboring treetops and counted five more nests within my view. I took my set to the buggy and visited each of the five nests in turn. They all proved to be old nests in different stages of dilapidation, from which I should judge that this pair of birds had bred here for a few years and had used all the nests in turn.

Another set of three eggs taken the same date from a nest in a poplar tree 20 ft. up, was also a new nest and built of sticks and twigs, lined with roots, stubble and leaves.

On May 19th I took two sets of Red-tail of three eggs each, both from poplar trees. These nests were both new and were within a short distance of old nests evidently used in previous years.

Just two more nests I will mention and then I will end my paper.

(To be continued.)

CHRIS. P. FORGE,
Carman, Manitoba.

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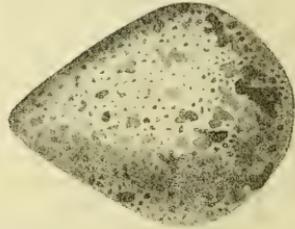
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VOL. XVIII. NO. 3.

ALBION, N. Y., MARCH, 1901.

WHOLE No. 174

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This, March, Oölogist was not issued until April 1st. The April issue will be printed on April 15th. Copy intended for that issue must be forwarded by *return mail*.

Index

to Vol. XVII (1900) of the Oölogist will be printed in the April issue.

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Examine the number following your name on the wrapper of this month's OÖLOGIST. It denotes when your subscription expired or will expire.

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Stephentown, N. Y.

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THE OÖLOGIST.

VOL. XVIII. NO. 3.

ALBION, N. Y., MARCH, 1901.

WHOLE No. 174

THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND
TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

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Gleanings from My Note Book.

In looking over my note book I find many short notes, or as it were, many glimpses of bird life, which, singly,

could not very well be expanded into an article, so I have decided to write them up collectively, and offer them under the above gleanings.

As the weather has a decided influence on bird movements, especially migration, I have usually prefaced my notes with a sort of weather report which I may use in connection with these gleanings. Its severity determines to a great extent the character and abundance of the winter visitors that we may expect from the northland, while its mildness leads us to look for solitary individuals of our summer residents which usually leave us for the sunny southland, hundreds of miles away.

January 1, 1900—N. W. wind with zero weather. As I glanced out of my den window I saw for the first time this winter a flock of about 100 Snowflakes on the snow covered ice along the lake shore. A Herring Gull was flying around the sandbar, and some Ducks were feeding along head of lake. A "*Lanius borealis*" flew about from one tree top to another and teetered up and down on the slender branches. Tree Sparrows are numerous as usual and make a tour of the town every day, eating the weedseeds in gardens.

February—Heard the first gurglings of Song Sparrows on the 13th, during an hour of sunshine in the morning. Next morning they climbed up in a brush pile to rehearse, but seemingly became disgusted for they soon dove into the cattails out of sight, and were not heard again until the 22d when I heard one bubbling over a little.

March 1.—This month came in a

"whooping." Last night the ground was nearly bare, but this morning 24 inches of snow covered the ground. A lot of Horned Larks came into my garden to feed, but hardly a weed top was to be seen.

March 2.—Just 26 inches of snow on the level, and great drifts have been formed by the heavy winds. Several groups of Crows flew around our town, anxiously scanning the snowy billows for a morsel of food. I scattered wheat on the snow for the Horned Larks and three of them remained all the afternoon. At first only one came, and when others came he tried to drive them away—seemingly afraid that there wouldn't be enough grain for all.

March 6.—Snow increased to 32 inches deep and the Horned Larks have become abundant—increase in numbers every day, and are so tamed by hunger that they run about picking up the buckwheat meats within 5 or 6 feet of me.

March 13.—Robins arrived on the 9th—4 of them—although the temperature was 6 degrees below zero. I saw about 50 today in an orchard where they were "yipping" and eating rotton apples that still hung on the trees.

March 23.—Saw the first Red-winged Blackbird this morning at 7 o'clock. He sat on the "tipmost branch of the topmost" elm tree and poured forth his happy "*O glee-ee-ee e.*" But he soon flew on north and was lost to view. The 40 or 50 other companions who ought to have been with him are probably stuck upon the barbarous bonnets of our highly organized and civilized "fearfully and wonderfully made" maids, who seem to be trying to equal their sisters in darker portions of the earth, in the manner of personal adornment.

I heard the sweet warblings of Bluebirds for the first time. This morning quite a sprinkling of Robins came into town and for some time their homely yet pleasant notes sounded the good

tidings of nearby balmy days "when the Robins will nest again." Saw two Meadowlarks flying north high in the air.

March 25.—This was a beautiful day, clear but an icy east wind made it rather frosty. Robins filled our streets with music, while the valley fairly swarmed with Bluebirds and I never have seen—even years ago—such a flock of Bluebirds. All day long they warbled, flitted and played around the old willow stubs that fringe along the swamp. During the morning hours Song Sparrows were in full song for the first time.

March 26.—At 5:30 p. m. about 75 Red-wings came from the fields and flew out in the swamp where they roosted in the cat-tails.

March 27.—Although the weather was cold and cloudy at 6:15 a. m., yet the Song Sparrows were bubbling over, as on a bright sunshiny morn. Kildeers were seen on the 23d, but I saw my first one today over in a grassy boggy place.

March 30.—As I stood in my garden this morning about 7 o'clock, I heard among the medley of Robins, a sweet warble, and closer listening revealed a Purple Finch's jubilant strain, coming from a lowly perch in a tree in my garden, but as I approached he mounted higher until the top of the tree was reached, when after a few bursts of melody, he arose high in the air flying first one way and another, then flying up the street. For the first time the Red-wings remained around swamp and sang their "*O-glee-ee*" and willow trees and cat-tails, while the irrepressible Song Sparrows mounted on dozens of high places sang with joy and sweetness—a song that is indeed of great variation.

Robins are becoming enamoured of each other and scenes of courtship are an every day occurrence—males uttering subdued twitterings and "showing off"—flitting about the females from

branch to branch and I think many are already mated. The multitude of Blue-birds that were here on the 25th have passed on north and spread out to the hillsides. Considerable snow in woods and protected places. Lake is frozen over with about 12 inches of ice.

March 31.—While strolling along the street before breakfast I ran onto a little troop of Chickadees. As I watched them as they hung back down, or, in other words, "bottom side up," one little fellow caught sight of a branch of the maple that was leaking sap, and with every indication of having found a "fountain of youth" the Chickadee flew to where the sap was dripping and drank and drank with an eagerness equal to an old toper taking his morning "eye opener," then he "chick-a-dee-deed" and from across the street came two more of these black-capped toppers who drank the sweet juice, and uttered those low notes that sound so far away.

April 1.—Beautiful clear day, but icy N. wind. I spent the day around on the lowlands, enjoying the hosts of Song Sparrows, Robins, Red-wings, Purple Finches and a few Meadow-larks. I heard a Phoebe for first time, and I wonder what such a bird can live on now when it is so cold, with ice and snow and no flying insects. Although I've seen a Bronzed Grackle several times, today is the first time that I've heard him tuning up the wires of his "Æolian harp." Robins are mated and looking for suitable nesting places.

April 2.—Blackbirds are here in abundance, especially at night, when large flocks of Red-wings, Cowbirds and Grackles come in from the fields, alighting in tree top around swamp and pour forth their songs and notes in rich profusion.

April 3.—For several days a small flock of Ducks has been feeding in the creek and today I noted a pair of Wood Ducks and several Mallards.

April 5.—The graceful Tree Swallows

came yesterday—about a dozen of them—and this morning they were skimming over the thin paper ice along the edge of swamp and lake.

April 8.—It has been bright and clear all day with a cold north wind, which drove the ice out of this end of the lake. A new flock of Grackles arrived from the south at 7 a. m. Those that have been here are building nests in almost every evergreen tree in town. I have never seen the town so full of them, indeed, the mischievous great glossy fellows seem to really enjoy town life more than any other bird I know.

A small band of Slate-colored Juncos are staying in the evergreen trees that adorn some yards. During a short walk in the woods I saw several Crows carrying nesting material. On my way home noted first Mourning Doves. Bird life here in the valley is abundant, but the woods are silent as the tomb—except for cawing Crows and the lonesome notes of the White-breasted Nuthatches. About 75 Ducks passed on north this p. m.

April 12.—This evening I took a walk along swamp, listening to the full chorus of peepers. They were heard first on the 6th. As I stood on the bridge I heard Snipe making a sort of short, mewing noise, as they flew by me just overhead, and I also heard the whistle of many wings as a flock of "Whistle-wings" went on north in the gathering gloom.

This p. m. a few Tree Sparrows came into the willows along the swamp road and one seemed to be in nearly full song, at least he burst forth in as sweet a strain as ever I heard from a Sparrow's throat. A pair of Loons arrived last night, also a great flock of American Herring Gulls, but they passed on north at sunrise. A Great Blue Heron sailed in from the north and spent the day fishing around the swamp. Yesterday a big Osprey

spent the day here, as did a Marsh Hawk.

April 15 —I made my first trip after sets of *Buteo borealis* today. My route was north, through the valley, except when I turned to climb the hillsides to where the nests were. Weather warm and clear until 5 p. m. Scarcely had I left the town when I heard the trilling of hundreds of Vesper Sparrows but found them scarce half a mile back on the hills. An occasional weak voiced old Field Sparrow trilled from some weed top—weak voiced but none the less welcome. From the distant woods came the drumming of a Ruffed Grouse. As I approached my first Hawk woods I saw the male sitting on a dead limb in a tall pine and near by the female sat on her nest which contained 2 plain eggs so I left them. The nest was 65 feet up an almost limbless tree and was lined with a bed of pine sprigs, corn husks, bark chips and few feathers.

In another woods about 3 miles farther north I found the second nest with the telltale sprigs of evergreen branches waving over edge of nest in a basswood about 50 feet up, but it was never used. While sitting on the sunny side of a big tree eating lunch I heard for the first time the melodious "chink" of a Louisiana Water Thrush. From here I tramped over a mile to see an old nest of *Buteo lineatus*—in a woods where I have taken 6 sets in years gone by. This pair had always laid a beautiful set for me by April 12, but at this time only one egg had been laid. The nest was an old one, which had not been fixed up at all—she had merely dug a hole in a mass of dead leaves that filled the nest, so that the egg was half buried but when I visited the nest on April 22d I found that she had added a few pine branches, corn stalks, bark strips and chunks of moss, on which lay 3 handsome eggs. The female left the nest as I approached and did not utter

a single cry, which is characteristic of this bird. I called on two other pairs of Red-tails but they had not begun to nest yet. After supper I spent an hour around swamp. About dark a hundred "Whistle wings" went on north in small flocks of from 6 to 50.

C. F. STONE.

Branchport, N. Y.

(To be continued.)

Timely and to the Point.

[Dr. N. expresses our sentiments to a T in the above valuable suggestions—with the exception of his "3d"—we boycott the wadding and thread"—prefer a good grade of fluffy cotton and *no thread*—tissue if anything for the outer wrapper. We have lost many a valuable small egg by perhaps too hasty or careless unwinding of the "thread."—ED.]

MR. EDITOR:—If you will kindly allow me a small section of your valuable paper I will endeavor to touch upon a subject that has been sorely neglected on the part of contributors to oölogical publications. Nothing is more aggravating than to purchase or exchange for fine specimens of eggs and upon receiving them to find a part of one or more sets broken, thereby rendering the set worthless. This catastrophe some will say is the careless handling of packages on the part of postal clerks, etc. Very true, but to them we cannot look for redress.

The fault lies in every instance with the shipper, with only one exception, and that is where packages containing eggs are sent over the Canadian border. In this case I have found that the over zealous custom officers in searching for dutiable gems, etc., put their fingers through many a rare and costly egg. This has been my experience with a choice set of *Accipiter velox*, as they were carefully packed and in a reinforced box. The cover had literally been pried off, contents of box fatally sounded and sent along. In this case I

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When ordering from this list it is always advisable to name a few substitutes.
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|---------------------------|-------|-----------------------------|------|
| Scaup Duck..... | \$ 75 | English Sparrow..... | 02 |
| Oldsquaw..... | 50 | Sharp-tailed Sparrow..... | 25 |
| Scoter..... | 75 | Song Sparrow..... | 03 |
| Whooping Swan..... | 2 50 | Indigo Bunting..... | 08 |
| American Egret..... | 30 | Tree Swallow..... | 15 |
| Texan Bobwhite..... | 10 | Rough-winged Swallow..... | 25 |
| Swainson's Hawk..... | 50 | Red-eyed Vireo..... | 10 |
| Great Horned Owl..... | 1 25 | Yellow-throated Vireo..... | 25 |
| Yellow-billed Cuckoo..... | 10 | Yellow Warbler..... | 05 |
| Black-billed Cuckoo..... | 15 | Chestnut-sided Warbler..... | 15 |
| Red-shafted Flicker..... | 10 | American Redstart..... | 15 |
| Western Nighthawk..... | 40 | Carolina Wren..... | 10 |
| Phoebe..... | 04 | Western House Wren..... | 08 |
| Prairie Horned Lark..... | 20 | Long-billed Marsh Wren..... | 05 |
| Yellow-billed Magpie..... | 50 | Chickadee..... | 15 |
| Meadowlark..... | 10 | Carolina Chickadee..... | 15 |
| Baltimore Oriole..... | 06 | Wood Thrush..... | 06 |
| Great-tailed Grackle..... | 15 | American Robin..... | 03 |
| | | Emeu..... | 2 50 |
| | | Alligator..... | 35 |
| | | Mud Turtle..... | 10 |
| | | Bronzed Grackle..... | 05 |
| | | Cedar Waxwing..... | 10 |
| | | White-rumped Shrike..... | 08 |
| | | Catbird..... | 02 |
| | | Black-necked Stilt..... | 50 |
| | | Road-runner..... | 25 |
| | | Rose-breasted Grosbeak..... | 10 |
| | | Yellow Warbler..... | 05 |
| | | Ovenbird..... | 20 |
| | | Flicker..... | 05 |
| | | Wilson's Thrush..... | 12 |
| | | Chuck-wills-widow..... | 1 50 |
| | | Florida Nighthawk..... | 50 |
| | | Louisiana Heron..... | 15 |
| | | American Coot..... | 10 |
| | | Curlw..... | 75 |
| | | Purple Grackle..... | 05 |
| | | Florida Grackle..... | 15 |
| | | Brewer's Blackbird..... | 05 |

Important,

as I stated in an announcement made in Dec., '00: "On and after January 1, 1901, the demands of my profession will come *first* and my entire time will be devoted to the same if required. My Natural History work will be of a secondary nature." These demands have taken nearly all of my time and I am obliged to offer my patrons only a portion of my stock. Other lists of Minerals, Showy Shells, Mounted Birds, Birds' Eggs, Books, Special Collections, Novelties and hundreds of other Odds and Ends in the Curio and Specimen line will follow as soon as conditions will permit. I may be able to mail you these lists or publish them in the OOLOGIST soon, perhaps not for months or years and possibly never; "the demands of my profession will come *first*."

Everything I have left, however, will be sold and sold *right*.

All orders for everything I advertise or offer for sale on my "Clearance Sale Lists" or otherwise will be promptly and carefully attended, and that, too, under my personal supervision; while the filling of orders, packing, etc., will be attended by able assistants, who have been with me in that capacity for years.

Faithfully,

Frank H. Lattin.

| | |
|--------------------------|------|
| Shoveller | 50 |
| White-faced Glossy Ibis | 75 |
| Wood Ibis | 75 |
| Great Blue Heron | 40 |
| Bl'k-crowned Night Heron | 15 |
| Red-necked Phalarope | 75 |
| Whimbrel | 50 |
| Lapwing | 20 |
| Killdeer | 20 |
| Ring Pheasant | 25 |
| Burrowing Owl | 20 |
| Florida Burrowing Owl | 1 00 |
| Golden-fr'ed Woodpecker | 50 |
| Mexican Horned Lark | 50 |
| American Crow | 08 |
| Fish Crow | 35 |
| Starling | 10 |
| Red-winged Blackbird | 03 |
| Tri-colored Blackbird | 15 |
| Orchard Oriole | 05 |
| Boat-tailed Grackle | 15 |
| House Finch | 05 |
| Gray-tailed Cardinal | 35 |
| Mockingbird | 05 |
| Brown Thrasher | 10 |
| Red-leg Turtle | 15 |
| Moorhen | 15 |
| Mute Swan | 2 00 |
| European House Sparrow | 05 |
| European Tree Sparrow | 15 |
| European Blackbird | 05 |
| European Redstart | 05 |
| European Robin | 10 |
| White-throat | 05 |
| Chaffinch | 05 |
| Greenfinch | 05 |
| Yellow Bunting | 05 |
| Hedge Sparrow | 10 |
| Willow Warbler | 10 |

Sets.

| | |
|------------------------------|------|
| Wood Ibis, 1-3 | 2 50 |
| Western Nighthawk, 1-2 | 90 |
| Bl'k-crow'd Night Heron, 1-3 | 45 |
| Brown Thrasher, 1-4 | 20 |
| Lapwing, 1-4 | 80 |
| Boat-tailed Grackle 1-3 | 45 |
| Red-winged Blackbird 1-4 | 15 |
| Tri-colored Blackbird 1-4 | 60 |
| Orchard Oriole 1-5 | 30 |
| Yellow Bunting, 1-3 | 25 |
| Chaffinch, 1-4 | 25 |
| Greenfinch, 1-4 | 25 |
| Redstart, 1-4 | 25 |
| White-throat, 1-5 | 30 |

SEA SHELLS.

| | |
|--------------------------------------|--------|
| White Spindle Shell, 4½ in. Pacific | 35 |
| Silvermouth, Gulf Calif. | 25 |
| Green Snail, Philippines | 35 |
| Black Ear, 3 in., Japan | 25 |
| Mother of Pearl, 3 in., Cey' n | 25 |
| Martin's Pike, 4 in., Hawaii | 35 |
| Silverlip, Mauritius | 20 |
| Pink Conch, young 4 in., Ba | 25 |
| Pearl Conch, 3 in., Panama | 25 |
| Worm Shell, Gulf Mex | \$ 15 |
| Ark Shell, Gulf Mex | 15 |
| <i>Helix fideles</i> , Oregon | 25 |
| Quoit Shell (½) | 05 |
| Magpie, Bahamas | 25 |
| E. I. Clam (½) | 15 |
| <i>Neritina rectivata</i> , Fla | 10 |
| Star Case <i>Cerithidea</i> , Fla. | 10 |
| Angel Wing (½) | 10 |
| <i>Bulimulus Bahamaensis</i> | 10 |
| <i>Scarabus pyramidalis</i> , Gm. | 10 |
| <i>Achatinella olivacea</i> , Haw'ii | 10 |
| <i>sprizonia</i> , Hawaii | 10 |
| <i>uniplicata</i> , Ha'ail | 10 |
| Claf Cowry, Australia | 10, 25 |
| Crown Shell, Gulf Mex | 15 |
| Thorny-nosed Murex | 15 |
| Pink Murex, L. Calif. | 60 |
| Black Murex, Panama | 60 |
| White Murex, Zanzibar | 45 |
| Scorched Murex, Bahamas | 05 |
| Leaf-back " Med. Sea. | 15 |

| | |
|----------------------------|------|
| Japanese Eburna | 25 |
| Foxhead, Singapore | 25 |
| Lettered Olive, Fla | 10 |
| Inflated Olive, Singapore. | 05 |
| Spider Web Olive, Cal. | 10 |
| Harp Shell, Ceylon | 35 |
| Lettered Cone, Ceylon | 50 |
| Marbled Cone, Polynesia | 50 |
| Virgin Cone, Mauritius | 50 |
| Fighting Shell, Gulf Mex. | 15 |
| Orange Scorpion, Poly. | 25 |
| Violet-mouth " Molucas | 1 00 |
| Ringed Cowry, Singapore. | 05 |
| Snake head Cowry, Aus. | 10 |
| Money Cowry Ceylon | 05 |
| Mole Cowry, Zanzibar | 45 |
| Poached Egg, Fiji | 20 |
| Paper Shell, Fla | 15 |
| Boat Shell, Mass | 10 |
| Screw Shell, Calif. | 15 |
| Goldmouth, Philippines | 25 |
| Band'd Tree Snail, Cuba | 15 |
| Black-mouth " | 15 |
| Sn Shell (pair), W. I. | 10 |
| Pacific Scallop (½) Calif. | 10 |
| Jewel Shell (½) Australia. | 10 |
| Venus Shell, Calif. | 25 |
| Thorney Chama, Bahamas | 10 |

The Student's Shell Collection: This Collection contains Forty Small Shells collected from all quarters of the Globe, all of which are numbered to correspond with a catalogue, which gives their proper, common and scientific names, with the locality where found. These shells when purchased individually and properly labelled would cost from 2 to 25 cents each. The following are the specimens found in this collection: Scorched Murex, Thorny-nosed Murex, Fish Basket, Gem Shell, Inflated Olive, Lettered Olive, Rice, Dove, Thunder Storm, Pelican's Foot, Ringed Cowry, Snake-head Cowry, Money Cowry, Rye, Porcelain Rump, Boat Worm, Brown Snail, Yellow Pea, Beaded Tower, Tower, Bloody Tooth, White Tooth, Zebra, Wheel, Venetian Snail, Key-hole Limpet, Many-lined Bulimulus, Hunch-backed Partula, Black-mouthed Tree Snail Banded Tree Snail, Little Agate, Silk Worm, Pea Nut, Banded Melampus, Indian Wampum, Angel Wing, Sun, Scallop and Jingle. Price 1 00

SEA CURIOS.

| | |
|-----------------------------|----|
| Tail of King Crab | 25 |
| Pink Coral, Samoa | 10 |
| Spike Coral, Bahamas | 25 |
| Mushroom Coral, Gulf Cal. | 35 |
| Propeller Coral, Bahamas | 35 |
| Branch Coral, E. I. | 10 |
| Organpipe " Singapore | 15 |
| Golden Sea Fan, Pacific | 50 |
| Yellow Sea Fan, Nassau | 15 |
| Purple Sea Fern, Key West | 35 |
| Armor Starfish, Panama. | 50 |
| Compass Starfish, Chili | 25 |
| Golden Starfish, Pacific | 75 |
| Giant Purple do, Pac. | 75 |
| Spined Pur. Urchin, G. Mex. | 25 |
| " " denuded | 15 |
| Key-hole Urchin, G. Mex. | 25 |

| | |
|------------------------------|-----------|
| Philippian Urchin, Phil. | 15 |
| Egg Case Periwinkle, 2 in pc | 10 |
| Acorn Barnacle, Pacific | 15 |
| Sea Horse, Atlantic | 40 |
| Sea Horse, Pac. | 40 |
| Pipe Fish (very fine) Pac. | 1 00 |
| Skate or Sand Shark Egg | 05 |
| Hermit Crab in Shell | 35 |
| Luck Tooth of Cod, Atlan. | 05 |
| " Eye Stone," Gulf of Mex. | 05 |
| Alligator Teeth, Fla. | 5, 10, 25 |
| " " mammoth | 50 |
| Tarpon Scales, 2 for | 05 |

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| " <i>Oweni</i> , Ind. | 25 |
| <i>Pentremites Godoni</i> , Ky. | 10 |
| <i>Anchoerinus bulbosus</i> , Ind. | 25, 50 |
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| <i>Athyris vitata</i> , Ind. | 05 |
| <i>Saphites nodosus</i> , Montana | 10, 25, 50, 1 00 |

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| Rubellite, Calif | 25 |
| Zircon Xtals | 25 |
| Ferruginous Quartz, doubly term Xtals. | 25 |
| Halite Xtals, faceted cubo-octohedron | 50 |
| Hanksite, button Xtals. | 15, 50 |
| Thenardite Xtals | 15 |
| " " crosses | 35 |
| Barite Xtals, Bad Lands | 15 |
| Tourmaline Xtals, N. Y. | 25 |
| Satin Spar, England | 15 |
| Quartz Xtals, Ark | 25 |
| Malachite and Azurite, Ariz | 25 |
| Cone-in-Cone, N. Y. | 15 |
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| Pearl Spar, N. Y. | 25 |
| Pryope Crystal, Dak | 05 |
| Chialostite Crystal, Calif. | 10 |
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| Coquina, Fla | 35 |
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| Lapis Lazuli | 15 |
| Chalcedony | 15 |
| Tinted Chalcedony | 10 |
| Tree Chalcedony | 15 |
| Red Ribbon Agate | 15 |
| Black Ribbon Agate | 15 |
| Moss Agate | 15 |
| Wood Agate | 15 |
| Fossil Coral | 15 |
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| Chestnut sided Warbler | Mole | Coffee |
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do not see that the shipper was at fault and so one must bear with it.

But here in our own service, where the box is never opened from the time it leaves the shipper until it is received by the consignee, a broken egg should rarely, if ever, be found. Collectors, as a rule, are either too anxious to save a few cents' postage or will not spare the time to tack a few reinforcements into their cigar box before packing the eggs. This is the greatest fault.

Secondly comes the careless manner in which the specimens are rolled in cotton. As a matter of fact I have received eggs from collectors packed in cotton that had been used in the field and over and over again until it was but little better than excelsior.

Other collectors have the habit of putting in a layer of cotton, then a layer of eggs, and so on until the box is filled. To such collectors my sentiments are perhaps best unsaid. No doubt others have received eggs from these same collectors in this condition.

I may have spoken harshly in this article, but those to whom it applies I trust will digest every word as meant for them. And now a few instructions on packing eggs.

1st. Ship by express instead of mail whenever possible.

2d. Reinforce all cigar boxes by tacking small cleats on the inside to prevent cover from crushing in.

3d. Wrap each egg carefully in a strip of thin white wadding, which has been previously separated down the center, allowing the soft side to come in contact with the egg. Wrap each egg around the smaller diameter first, then around the greater, and lastly use a few turns of thread to keep the cotton in place.

4th. Put a thick layer of cotton into bottom and top of box.

5th. Pack each egg in very carefully and use great caution in closing lid of box. (Many are broken this way.)

6th. Use heavy wrapping paper and stout twine, address plainly and don't forget, if your conscience will allow of it, the *glass notice*, where our careful manipulator, the postal clerk, will see it.

7th. Be ready to make all losses good.

Yours for more care,

J. B. NEWTON.

Unionville, Conn., Jan. 15, 1901.

Field Notes from Manitoba.

On May 4th I found two nests of Krider's Hawk, one in a partly dead elm 20 ft. from ground. To this nest I climbed and found it contained nothing but appeared to be ready for eggs. The other was also in an elm about the same height and was not quite ready for eggs. On May 9th I tried these nests again, but found them empty. On both occasions the old birds circled above the trees and scolded me for my intrusion so I decided to call again. So on the 22d I called on my way home from the swamp, still no eggs. A little further down in the woods I saw a very small nest in an oak, not more than 15 ft. up and climbed to it. It contained two eggs of Red-tail, both were incubated. This then was the second nest built by this pair, the first nest having been deserted because I had climbed to it on the 4th of May. The nest was very small, no larger than my two hands and quite loosely put together.

On May 31st while looking for Marsh Hawk's nests I called for the third time at the Krider's nest located May 4th, and as it was still empty I knew there must be another somewhere. A search revealed a nest in top of a tall oak, but the bird was absent so I did not climb but toward evening I called round again and at my approach the bird left the nest. I quickly made the ascent

and took a small set of two well marked eggs, slightly incubated. The nest was small and loose and I could see through the bottom but not clearly enough to discern the eggs. This is a phase of character I have not before noticed in the Hawks, but in these two cases with Red-tails and in four cases with Swainson's Hawk this season, I found the birds deserted the nests I had climbed that contained no eggs. In the one case with the Swainson's Hawk I found a nest complete but did not climb. A few days after I called round for this set and on climbing found one egg. As the nest was where it could be seen for over a mile in the top of a dead willow I took this egg, but returning next week found the nest deserted. I then drove over the school section and examined all the bluffs and in a small willow bush found Mrs. Swainson trying to incubate two more eggs, which I knew by their resemblance to be the other eggs of the set, I having already taken the first. On this occasion she had seized upon a partly built Crow's nest, flattened it out and deposited the two eggs in it.

On the 18th of June I took my last set of Krider's for the season. This was a second set and strongly resembled the first one. The nest was small in a tall oak beside a ravine about one mile distant from where I took the first set and contained two eggs nicely marked. This nest was newly built like most of the others by the birds and was unusually deep, the cup being nearly 6 inches in depth and 7 in diameter. Both male and female birds were quite bold and seemed to resent my robbing their second nest. Whether they built a third I don't know, but if they did I did not find it as my horse hurt his feet shortly after while away after Loon's eggs, and I had to leave the field for the season.

CHRIS. P. FORGE,
Carman, Manitoba.

Some Winter Birds of a Country Farm-yard.

Ruffed Grouse, *Bonasa umbellus*. A few of these beautiful game birds are seen during the winter budding in apple trees near our yard.

Downy Woodpecker, *Dryobates pubescens*. Quite plenty in shade trees in our yard on pleasant days during the entire winter.

Blue Jay, *Cyanocitta cristata*. Very abundant. A quite large flock makes daily visits to our yard in search of food.

Pine Grosbeak, *Pinicola enucleator*. Quite abundant but more so as spring approaches. They come in flocks to the maples in our yard and feed on the buds.

Amer'can Goldfinch, *Spinus tristis*. Flocks of this species alight in the trees in our yard quite often during the winter. In their winter plumage they are very plain looking birds.

English Sparrow, *Passer domesticus*. An occasional straggler finds his way to our yard. I caught one in my hands that flew into our shed to get out of the storm.

Snowflake, *Plectrophenax nivalis*. Very large flocks can be seen from our yard skimming over the fields and pasture and a few come to our yard occasionally.

Song Sparrow, *Melospiza fasciata*. As spring approaches we are filled with gladness by the sweet song of this sparrow returning to his summer home, although a few remain here nearly the whole year.

Northern Shrike, *Lanius borealis*. One of these butchers is an occasional visitant to trees in our yard during the winter.

Brown Creeper, *Certhia familiaris americana*. These interesting little birds are winter visitants to our farm yard shade trees, searching for food under the rough bark of the maples and butternuts.

White-breasted Nuthatch, *Sitta carolinensis*. Another interesting little farm-yard visitant, flying in open doors and windows and making themselves much at home and all of the time uttering their curious quauk.

Red-breasted Nuthatch, *Sitta canadensis*. The above description of the White-breasted species well describes this species, although the Red-breasted is not so abundant.

Chickadee, *Parus atricapillus*. Last but not least on my list comes the little Titmouse, the bird of so friendly disposition and gentle manners, who thinks no one his enemy. They are very abundant here and help to make the long winter pass more swiftly by their happy, joyful nature. In closing this paper I cannot refrain from writing what Wilson says of this species which I take from Davies "Nests and Eggs," fourth edition. It is as follows:

They traverse the wood in regular procession from tree to tree, tumbling, chattering and hanging from the extremities of the branches, examining about the roots, the leaves, buds and crevices of the bark for insects and their larva. They also frequently visit the orchards, particularly in the fall, the sides of the barn and the barn-yard in the same pursuit, trees in such situations being generally much infested with insects. Therefore we rank this little bird among the farmer's friends, and trust our citizens will always recognize him and as such."

I consider the above description of this little bird the best I have ever read and would call particular attention to the last few lines, and trust that all our citizens throughout this broad land will give more attention to the study and protection of our feathered friends; stop the wholesale destruction of our native birds before it is too late; unite in this great work, for unity means strength.

GUY L. BRIGGS,
Livermore, Maine.

A Red-headed Black-bird.

I saw a Red-winged Blackbird last spring with a red head as well as shoulders.

I was painting a fence near a swamp and the bird was in sight at any time I had a mind to look for him. My team came to take me home and I called my wife's attention to the bird.

We are both familiar with this species and have it mounted at home.

The bird was evidently mated because it was June and all of his actions pointed to his being interested in a family in the bushes, near by.

R. S. TORREY,
Wenham Depot, Mass.

More Albinos.

In the December issue of the OÖLOGIST I saw an article written by G. G. Welsh giving an account of an Albino English Sparrow. A day or two after I read this article a friend told me he had seen a Sparrow which was nearly all white in a large flock of the same species. I told him to try and get it for me, so the next day he brought it, having shot it that morning. I found it to be a female English Sparrow with both wings pure white and a few white feathers on its head and neck. The rest of the feathers were of the same color as other English Sparrows. I now have it in in my collection mounted with its wings half spread.

I have three other Albinos in my collections which were killed here. On April 23, 1899, a friend of mine was watching near a pond for some Ducks when he saw a white bird flying alone, coming toward the pond. He shot at it and killed it, and as he had never seen a bird like it he brought it to me. I found it to be a pure white "Yellow-legs;" this is the only pure white albino "Wader" I have heard of. (if there are others I would like to hear of them.)

The same person on March 16, 1899 brought me a male Robin which has three white feathers in its right wing and four in its left wing, four white feathers in its tail, breast white, its head, neck and back mottled with white, several coverts white.

The other Albino which I have is a female Bob-white. It was killed on November 28, 1899. This bird is of a very light color all over, but not pure white, its bill white, feet and legs a pale flesh color.

If these notes are of sufficient interest you may publish them.

O. S. BIGGS,
San Jose, Ill.

Review.

CANADIAN BIRDS BY JOHN MACOUN,
M. A., F. R. S. C., NATURALIST TO
THE GEOLOGICAL SURVEY OF
CANADA.

In compiling this catalogue of the birds of Canada the author has endeavored to bring together facts on the range and nesting habits of all birds known to reside in, migrate to or visit the northern part of the continent.

In addition to the Dominion of Canada he has therefore included Newfoundland, Greenland and Alaska.

Since the publication of *Fauna Boreali Americana* by Swainson & Richardson in 1831 no attempt has been made to produce a work dealing with the ornithology of the region now embraced in the Dominion of Canada.

In 1857 Mr. Montagu Chamberlain published a catalogue of Canadian birds and previous to this Mr. T. McIlwraith published his *Birds of Ontario*, which included the birds known to occur in that province only.

The *Birds of Manitoba* by Mr. Ernest Seton Thompson was published in 1891, and, as the name implies covered little more than that province.

In 1891 *Bird Nesting in Northwest*

Canada by Walter Raine was published, which gave an account of the birds found nesting in Assiniboia, a vast territory that had previously been overlooked by ornithologists.

Mr. C. E. Dionne of Quebec published a catalogue of the birds of that province and Mr. Ernest D. Winkle has published a valuable little work entitled *The Birds of Manitoba*, while in 1898 Mr. John Fannin's *Birds of British Columbia* appeared.

While the above ornithologists were engaged gathering and publishing the valuable information contained in these works, Professor Macoun had constantly before him the necessity of the present work and has been collecting notes and observations during all his journeys since 1879. Consequently he has gathered together a mass of valuable and interesting matter and his work on *Canadian Birds* is the most complete and up-to-date work yet published.

Part I includes Water Birds, Gallinaceous Birds and Pigeons and Part II will be printed this spring.

Least Bittern Observed in Pennsylvania.

Having noticed in the April (1900) *Oölogist* the article by Mr. E. R. Forrest, Washington, Pa., in regard to Least Bittern being observed in Pennsylvania, it may not be out of place for me to state that I have observed them here in the months of April, June, July, August and September. It appears strange that I never observed any in May. For two years I have observed a pair at Holmesburg, this county along the Pennypack creek, where they nested, although I never found their nest. In August 1899 at this locality I flushed four from along the creek; two I identified as young Birds from their weak, uneven flight. In September several years since, a boy offered me one for half a dollar, which he shot at Brideburg, this county. It was a young one and not quite full fledged.

RICHARD F. MILLER,
Philadelphia, Pa.

\$5.00 for only 50 cents.

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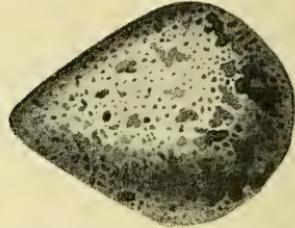
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VOL. XVIII. NO. 4.

ALBION, N. Y., APRIL, 1901.

WHOLE No. 175

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Brief special announcements, "Wants," "Exchanges," "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

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Examine the number following your name on the wrapper of this month's OÖLOGIST. It denotes when your subscription expired or will expire.

No. 175 your subscription expires with this issue
180 " " " " " Sept., "
184 " " " " " Dec., "

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

IMPORTANT. This April OÖLOGIST was issued April 15th. The May issue will be printed on May 1st. Copy intended for that issue must be forwarded by return mail.

WANTED.—Collectors throughout the United States and Canada to collect for me scientifically birds' eggs in sets, with full data, at $\frac{1}{2}$ Latin's catalogue rates. DR. M. T. CLECKLEY, 457 Greene St., Augusta, Ga. 175

WANTED.—Sets of eggs containing abnormal specimens, such as runts, albinos, monstrosities, abnormally colored or shaped eggs. Will give cash or good exchange. J. WARREN JACOBS, Waynesburg, Pa. 101

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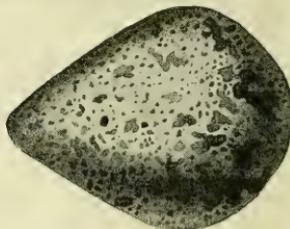
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THE OÖLOGIST.

VOL. XVIII. NO. 4.

ALBION, N. Y., APRIL, 1901.

WHOLE No. 175

Who Is An Oologist?

That is a question often asked without being properly answered. The usual reply is: "He is an egg collector." In part such an answer is correct, but only in part, and it is not a very just description, for one may be an egg collector without being an oologist, and one may even, at this period of camera perfection and enlightened methods of bird study, be an oologist without being an egg collector.

Hence, it is evident that for the sake of classification, it is not untimely to ask the question: Who is an oologist? And it may be of advantage to consider the subject carefully, with a view of finding a comprehensive answer to the question.

Firstly, then, let us inquire whether an egg collector is an oologist and if there is not some further requirement than that of being an egg collector in order that he may correctly be called an "oologist."

Ornithology is a science and oology is a branch of ornithology, and a science. An oologist is a scientist, for his object in pursuing the investigation of oology is to increase the knowledge of the subject; to add to science, or to add to his own knowledge. In order to do this, that he may have specimens for use in studying the various types and variations, colors and patterns, he collects birds' eggs, and he is, perhaps, justified in collecting, for his purpose is a good one.

But there are persons who collect birds' eggs merely for the whim of collecting, after the manner of the small boy who collects tobacco tags, without any higher aim than just to possess a big collection or as a pastime. Are such

persons "oologists?" Assuredly not, but they are often times honored with the name. They really belong in the same category with the small boy. Then, why should they be called oologists? There is no reason why they should, for they have no claim to the name.

Further, we will ask: Is an oologist a scientist? Most assuredly so, yet he may not wish to add to science any further than the increasing of his own information; but that does not wholly bar him from being a scientist. Of course, he would have a clearer title if he were liberal with the facts he gleans in his investigations and observations. Yet if he is the right kind of oologist, the kind that collects eggs for the purpose of study, he may justly be called a scientist. And if he is, shall he not have an exclusive name? That is just the point.

The name "oologist" is too often misapplied. It is applied to shield the indiscriminate collecting of the small boy, the wanton collecting of the mere egg collector, and those persons whose only object is to own a collection.

So it seems well to separate and classify egg collectors into three classes for the convenience of reference:

Oologists, 1st. class. Such persons as collect eggs for the purpose of study, for the increase of knowledge as to the contour, coloration, measurement, variation of birds' eggs; the advancement of information respecting the nesting habits of birds, their manner of nest building, the effect of food and special environment upon the color of eggs; the length of time between the depositing of each egg of a set; the resemblance of sets of eggs taken from same pairs of birds in consecutive years; length of incubation, and any other facts of value.

Oologists, 2d class. Such persons as

investigate and observe along the lines mentioned, but who do not believe in egg collecting; who, with aid of camera and note book, observe facts and study the coloration of eggs, manner of nesting, etc., without disturbing nests or eggs.

Egg collectors, 3d class. (Not oologists at all,) who collect eggs merely to be collecting; amass collections, merely to be amassing; whose insatiate yearning is to add and add without any just motive, without any beneficial end. This class includes the small boy who, ignorant of the harm he does, collects indiscriminately; but not the small boy with a real desire to study and who collects sparingly and makes good use of the little he collects.

With the present wave of bird protection sweeping the country and the war justly waged by the Audubon society being carried forcibly on, there is no reason why this 3d class of so called oologists (but who are really not oologists at all, but simply egg collectors) should not be harshly dealt with. It would simply help real oology and tend to draw the distinction which is needed between the collecting for scientific reasons by oologists, and the collecting for the sake of collecting by mere egg collectors.

JOHN W. DANIEL, JR.,
Washington, D. C.

Two Odd Sets.

The American Crow in Knox County, Illinois, is an abundant bird, as it is throughout the Illinois corn belt. Every available timber or grove has its occupants during breeding season in accordance with the favorable growth of the trees and the location. I do not think that these birds return to the same timber or grove year after year, although undoubtedly may be found in

the same neighborhood of former nesting sites. From my observation, however, the second laying has invariably been found to be close by the site of the first nest, unless in very exceptional cases. This peculiarity makes it possible, although not probable, that two separate pairs of birds laid very exceptionally colored eggs in the same season and only a few miles apart.

There were collected on March 31, 1894 a set of five eggs of the American Crow which have a distinct ground color of light brown, showing not a sign of bluish-green, spotted quite generally with small dots of black more abundant around the large end, and an occasional dot which might tinge on purple. One egg is marked thickly with around the small end, and all the eggs are uniform and of the average size. The bird flew off its nest on approach but remained nearby. The nest was typical of the Crow and was placed in a triple crotch of an oak tree in thick timber forty feet from the ground.

Some two weeks later another collector found a set of four in a timber four miles to the south. The markings on these eggs were more blotched and decidedly more purple in color, distinctly brown in shade but lighter than the former set and eggs average, a trifle larger. Nest construction was almost the same, but the second nest was situated nearer to the ground. A visit to the site of the former nest indicated no cause for a change. I looked thoroughly for a second nest but without result, and I concluded both sets were from the same birds. These two sets are the only ones with the peculiar ground color which have come to my notice in that locality or elsewhere. Unmarked eggs and eggs widely differing in size and coloration are, however, frequently found.

H. M. HOLLAND,
San Diego, Cal.

THE OÖLOGIST,
FOR THE STUDENT OF
BIRDS, THEIR NESTS AND EGGS.

VOLUME XVII.

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Gleanings from My Note Book.

(Continued from last issue.)

April 18.—Barn Swallows arrived here today—8 of them. Yesterday I noted Flickers for the first time. About 50 Gulls arrived this morning.

April 22.—It rained last night so I left my "bike" at home and went over my 15 miles of Hawk route afoot. Another climb to the Red-tail's nest revealed but two eggs so I put them in my pockets and came down jab by jab, to the tune of a pair of angry Hawks' screams. While packing the eggs I was surrounded by a band of Ruby-crowned Kinglets, who were being entertained by a lot of Chickadees. Just as I left the woods I heard the flute-like voice of the Wilson's Thrush. The second Red-tail was near the nest but it was empty and in fact she did not use it nor could I locate her nest anywhere else. From here I crossed over the hills to the valley of Potter Swamp, where bird life differs from any other valley because of so many Woodpeckers. Here there are hundreds of old stubs bordering the woods so that no doubt this is the reason of their abundance. Nine miles south in my valley, or rather, the first one east of Potter valley, I seldom see a Red-headed Woodpecker, but in Potter valley they are very common, as are the Red-bellied, Yellow-bellied, Hairy and Downy Woodpeckers. From here I turn homeward, deciding to follow the crest of the hills, but it was a long nine mile tramp through birdless fields and woods. In the valleys the air resounds with noisy Flickers, sweet carolings of Vesper Sparrows and other common birds, all in abundance but the hills are yet dreary and barren of bird life. As I neared home I struck for the valleys, crossing several ravines, in which I heard Louisiana Water Thrushes in nearly full song.

April 24.—After a short supper and a

still shorter cup of coffee, I pushed my wheel up hill for 2 miles to visit a nest of Red-shouldered Hawk. I found her at home but she had laid but two eggs so I left them. This is a late date for this pair to be nesting as I have always taken her full sets by April 12. Later comparison with 5 sets that I had taken out of these woods, which show the same type, prove that this is a new female, which probably accounts for the later nesting. Spotted Sandpipers arrived last night, and Towhees yesterday.

April 26.—At 6:30 p. m. I rode my wheel 2 miles and called on a pair of Red-tailed Hawks and although the female looked strong and healthy, and had a vociferous voice, yet she had only exerted herself to lay one egg—and that's all she did lay—so I left it, 65 feet up in a big oak, to the tender mercies of a group of Crows that were amusing themselves with these Hawks. On my way over I saw a Pied-billed Grebe dabbling in the creek, while overhead a solitary Duck was winging his way northward. After dark I heard a Wilson's Snipe's "heavenly music" as he zigzagged about over the swamp, which was rudely interrupted by a startled Green Heron who emptied the contents of his voice upon the air.

April 28.—Four "Bluebills" (Lesser Scaup Ducks) were shot on the lake yesterday. This morning at 5 a. m. I found a new pair of Red-shouldered Hawks, nesting in a swampy woods near town. The female left the nest as I was passing by, and put up a "holler" for the male who "cackled" his delight at seeing me take his 3 eggs, which were slightly incubated. The nest was an old one, 50 feet up in a big beech tree, and was lined with the ever present branches of evergreen, dead leaves, pieces of bark, and all being beautifully flecked with fluttering downy feathers from breast of Hawk.

This evening I visited a nest of Red-shouldered Hawk about 2 miles away. I had lost track of this pair for 3 or 4 years, but at last they had come back to their old home, 50 feet up in a shag bark hickory tree. She left the nest slowly and without any fear, while I also climbed to the nest slowly without any fear, but judging by the amount of bark at the base of the tree, when I got down, there could not have been very much left on it. However I felt repaid for my lacerated trousers—and feelings—for I brought down a set of 4 eggs. About one mile away I called on another old nest, but the Hawks were not there so I crossed a field to another swampy woods, where I found her sitting on 3 eggs slightly incubated. The nest was just 40 feet, 5 inches up in a nearly dead birch tree, and was an old nest relined with bark strips, pieces of bark, and decorated with downy feathers. As I coasted homeward I heard many Wilson's Thrushes and I remarked that it is noticeable how they seem to be common on the hills but never heard as yet in the valley woods.

April 29.—My trip today was over my main Red-shouldered Hawk route. It was a beautiful day—quite hot in the sun, but rather chilly in the shade. Leaving home at 6 a. m. I tramped nearly 6 miles, visiting two orchards before I found *B. lineatus* at home. This nest was just 27 feet up in birch tree, in woods on hillside. When the sitting female saw me approaching she put up a "boller" and half standing over the eggs she kept uttering cry after cry, and I soon found the reason for her fear for nestled in the lining of pine sprigs, bark strips, grass and moss were 4 large beautiful eggs. She only flew into near by trees—her "cries" soon calling the male, but he was very moderate. It is noticeable that the males' cries are more of a cackle than the females'. He must have been far away for it took him about three

minutes to respond to the female's cry for assistance.

I next visited a small woods down in the valley where I collected a set of 4 last year, but this time I did not get a smell although a male's actions led me to believe that he had a nest near by, but I found a pair of Crows nesting in same tree—their nest being placed about 10 feet under the Hawk's old nest.

Continuing on up the west slope I visited three old nests but found the woods Hawkless. Returning to the east slope I found that a pair of Red-shouldered Hawks had fitted up an old Crow's nest in a dry thin strip of woods. The nest was about 50 feet up in a big maple tree and was lined with chunks of bark, pine sprigs, moss, and stuccoed with white downy feathers that fluttered like so many tiny flags. The distribution of these Hawks in my section varies every year. Some years they are abundant, then other years are not near so common. I visited in all 10 nests in as many woods and only found two sets of four eggs. Several years I have taken as many as seven sets over this route.

April 30.—This evening I took a walk in near by woods just for pleasure, little expecting to take anything. I was therefore somewhat surprised to flush a Red-tailed Hawk out of a pine tree and a nest where I took a set of Crow's eggs last year. She had fixed the nest over with pine branches, bag strings, bark strips, grass and hen feathers. On the rim lay an old nest of Red-eyed Vireo. I have been acquainted with this pair of Red-tails for five years and have found them very changeable in regard to nesting. Some years they take up their abode in woods bordering a big ravine across the valley where they have two nests about one-half mile apart. Again they come over to the west slope where they also have

two nests that they generally fix up before deciding which one to use.

Red-shouldered Hawks frequently adorn two nests before using either, and one pair that I know of fixed up three nests and then left me to guess where they finally nested.

C. F. STONE,
Branchport. N. Y.,

(To be continued.)

The Red-tailed Hawk^o in Central Illinois.

By far the most common all-the-year-round Hawk in this section of the country. In the early Spring and in the Autumn this species may be seen by anyone that is in the least observant of nature and her doings, hovering in varying numbers over stubble-fields and meadows, and in the Winter season sailing across cornfields in search of its "daily bread," which consists principally of mice and rabbits with an occasional small bird by way of a desert and on comparatively rare occasions the barnyard will be invaded and an unlucky chicken or duck carried away for a "Sunday dinner."

Or during these same seasons if he is not out looking for a dinner he will be seen sitting quietly in a cottonwood tree by the roadside, where he is ever on the alert and "scents danger afar" as anyone carrying a gun who has tried to get in shooting range of him can testify.

Sometimes, however, if you are in a buggy you can approach very near the tree before he takes flight, and occasionally he will even be so trustful (when you do not happen to have a "concealed weapon") as to allow you to drive by, within maybe 30 feet of the tree, without appearing to notice you.

During the nesting season and the time of rearing the young they confine themselves more exclusively to the timber.

More of this species are killed by the farmers and hunters in this locality than of all other species of Hawks combined: because in the first place they are probably as numerous as all other resident species combined, and secondly and more important they are more inclined to get away from the woods in search of food, and this "coming out of the woods" as it were makes them more conspicuous and thus a target for the shotgun.

Their nesting begins early in the springtime, their first sets usually being completed between the 15th and 25th of March. Only one set is laid in a season unless the first is destroyed, when a second set will be laid and if that too be destroyed a third and even possibly a fourth may sometimes be laid under similar circumstances. However I have never taken more than three sets from the same pair in one season. When more than one set is laid I have found the interval between sets to average about 23 days. My experience has been that sets of two and three are about equally numerous.

For their nesting site they almost invariably choose one of the tallest trees if not the tallest tree in any particular piece of timber, and usually the most inaccessible possible position on the upper and outer branches of the tree is where the nest will be found, although the position in the tree or rather the distance from the trunk of the tree will vary more than the height of the nest in the tree or the height of the tree. The general height of the nests in this county (Champaign) is from 60 to 110 feet, with perhaps an average of 80 to 85 feet. Of course an occasional nest will be found on either side of the above limits.

There seems to be no preference shown for any particular species or variety of tree. The only question on this subject that seems to interest them is, "Is it a tall tree?" And if this can

be answered in the affirmative that tree is as likely to be chosen for a nesting site as any other tree of the same height whatever the species.

Contrary to what seems to be the rule in some sections of the country, they, in this locality, rarely occupy the same nest more than one season, an entirely new one (usually not far from the old one) being constructed each year, or two, three or four in a year if that number of sets are laid.

After incubation has begun they are, as a rule, very close sitters, refusing to leave the nest till you are under the tree and sometimes not until you have rapped repeatedly on the trunk of the tree or thrown several clubs among the limbs. I recall one instance in which I failed to dislodge the female from her nest by even these proceedings, although I rapped heavily and repeatedly on the tree trunk and threw clubs until my arms were tired, several of the clubs going very close to her. She stuck to her nest till my climber was within 20 feet of her before she took flight.

Almost without exception the sets from a pair of birds show a marked individuality as to the number of eggs in a set, size, shape and ground color of the individual eggs, and color or colors and degree and intensity of the markings. My experience has suggested to me that the plain or very slightly marked sets are laid by young females, and that as the age of the female increases the degree and intensity of the shell markings increase till the limit for that particular female is reached.

Have any of my readers made observations upon this point? If so, *did* the degree and intensity of the markings increase with the *age* of the bird up to a certain limit, or did it *not*?

What is more exhilarating and enjoyable than a drive to the country and a tramp through the woods in the middle of the Red-tailed Hawk season (April

1st to 15th) a time when all nature is just beginning to put forth the buds of a new life? What more interesting than to watch a Red-tailed Hawk sailing, floating back and forth across a field, now moving swiftly for a few paces as though borne by a brisk breeze and again hovering for moments above a spot as though caught in a dead calm and all the while with scarcely a visible movement of those majestic sails? What will more tend to draw one's thoughts from the things of earth and to direct his mind to that great home above to which all mankind should aspire, to impress upon him the great wisdom and goodness of his Creator, than to watch a Red-tailed Hawk when he takes upon himself the role of a Skylark and soars, at first in broad and sweeping circles, each one a little higher than the preceding, and then in gradually narrowing zones, but ever "onward and upward" till he is a mere speck outlined against the blue sky and then at last the eye can follow him no more and he disappears from view as though the very gates of Heaven had opened and allowed him to enter in?

R. L. JESSEE, M. D.,
Philo, Ill.

Queer Nesting.

In the December OÖLOGIST I notice that A. G. Prill of Scio, Oregon, mentions finding "a nest of the Mountain Partridge containing 11 eggs of this bird and 9 eggs of the Ring Pheasant."

He says that this is the first time that such an occurrence has come under his observation, and that the Partridge was sitting on the eggs and the Ring Pheasant was not about.

I do not wish to make any corrections to Dr. Prill's notes, but simply wish to add a few words, as I have had some experience along the same line.

I have found the eggs of the Ring Pheasant in other bird's nests at least a

score of times and in every case the Pheasant left and the other bird did the incubating.

Have often found from one to eight (usually three or four) of their eggs in the nests of the Mountain Partridge, Oregon Ruffed Grouse and the Sooty Grouse and even in the nests of domestic hens. Have found nests which contained eggs of the Ring Pheasant, Sooty Grouse and Mountain Partridge. Each time the Sooty Grouse was incubating all the eggs. I have also found nests containing eggs of the Ring Pheasant, Mountain Partridge and Oregon Ruffed Grouse, the latter doing the incubating.

A friend of mine informs me that he found a nest which contained 6 eggs of the Ring Pheasant, 6 Sooty Grouse, 4 Oregon Ruffed Grouse and 3 Mountain Partridge eggs and the Sooty Grouse was sitting on the eggs.

As to what would become of the young hatched from such a "mix-up" as this I can't say; but I know of one case, two or three years since, of a Sooty Grouse hatching five young Grouse and three young Ring Pheasants. She soon took them all to a wheat-field where I often saw them. As soon as they were old enough to fly the Grouse mother would, when disturbed, fly up into an old dead fir tree and call and the young would all follow her, Grouse and Pheasants alike. Two of the Pheasants were males and it was a rare sight to see them, with their long tails, sitting up on the limbs of an old dead fir tree, with the Grouse.

ELLIS P. HADLEY,
Dayton, Oregon.



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THE OÖLOGIST.

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WHOLE NO. 176

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Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

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THE OÖLOGIST.

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ALBION, N. Y., MAY, 1901.

WHOLE No. 176.

THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND
TAXIDERMY.

FRANK H. LATTIN, Editor and Publisher,
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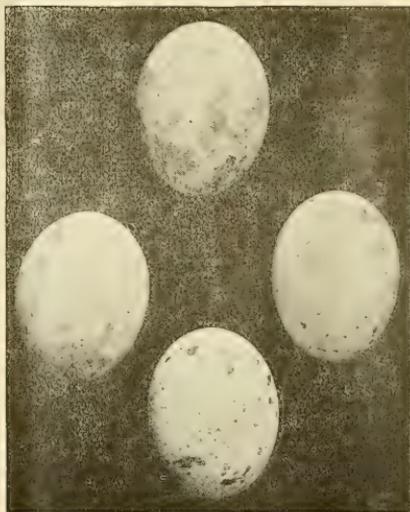
ENTERED AT P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

The Western Red tailed Hawk.

(*Buteo borealis calurus.*)

To Raptorial birds, especially such species as partake of the nature of the Vultures and other carrion eaters in

their habits, Southern California offers, next to the countries of the Torrid zone, most ideal conditions, both climatic and geographical, for the rearing of their young. The rains of the winter equinox have usually abated by the last week of March, so that Hawks, Crows, and others of the larger birds which occupy open nests can by that time or earlier have their last year's homes renovated or if these be destroyed or occupied by some hardier Owl, be well started on the construction of



EGGS OF THE WESTERN RED-TAILED HAWK.
(From a set in the author's collection.)

new ones. Occasionally, as was the case this season (1901) heavier rains came on just about the time these birds had begun to deposit their eggs and their nidification was correspondingly retarded.

Orange county, where my home and principal collecting grounds have been

for the past several years, is very nearly in the center of the seven counties lying south of the Tehichapi Mountains which are known as Southern California. It has some frontage on the Pacific Ocean, though no ports or watering places of importance are located on its coast line. On its south eastern border hills come down to the sea and thence running north, north west they form a moderately well wooded boundary along its northern line. Otherwise the county is about equally divided between level cultivated lowland and the rolling barley fields of the mesas.

In the heart of the hills before mentioned there are numerous large ranches within whose bounds the Mexicans, notorious wood thieves, have not been permitted to carry on their wood-cutting operations. Many sycamores and oaks dot these ranches especially wherever water is to be found in the smaller canyons, and in these the Red-tails find suitable nesting sites. Of course there are other Hawks which breed in the same localities, but the Red-tails are the most numerous by about twenty-five to one. It has been my good fortune, ornithologically speaking, to be located in this region for the past three and a half years, but it was not until last year that I thoroughly "got onto the curves" of the nesting Red-tails, and the result was seventeen sets saved out of about twenty collected. Three of these were of four eggs, six of three, and the remainder, eight sets, of two eggs each. I think this porportion will hold good in almost any representative series of sets of Red-tailed Hawks collected in Orange county. So far this season I have taken three sets of four, four sets of three, and four sets of two which were preserved. One set, taken from an immense nest forty feet up in a sycamore—which, by the way, had no branches for the first thirty feet—and consisting of two eggs was too far gone

to be saved. This set had evidently consisted when first laid, of three eggs, for about half of the shell of one egg was found clinging to the edge of the nest. Of course they were finely marked. Who ever saw an impossible set which was not beautiful?

Again, only last Sunday, I climbed over sixty feet to a new nest in an immense old sycamore and found *one* heavily incubated egg. No broken shells were visible nor to all outward appearances, had anyone climbed the tree ahead of me. Last season, this pair laid a nice set of four heavily marked eggs in a nest in another sycamore not fifty yards from this one. This is not an "off" year, for two pairs of these birds which laid but three eggs each last year, have already presented me with sets of four each and tomorrow I am going to see what they have done in the way of second sets.

Several pairs of Red-tails are nesting on low cliffs, buildings or ledges or else in crevices of the rocky wall, while I know of one nest, which held three young in May of last year, which was built in a depression in the top of a huge boulder projecting out from from a sloping sidehill. Now and then, though seldom, a nest will be built in a wild walnut growing on the steepest slope of a grassy hill. As these trees are seldom over twenty-five feet in height and correspondingly small of growth, such nests are the collector's delight. The photo presented herewith is from a set of four eggs taken from such a nest situated twenty feet up in a walnut on a sidehill. No bird was on the nest and neither one put in an appearance until I had climbed to the nest, when both commenced their usual screaming and kept it up until I left the tree. Portions of two lizards and a gopher snake were in the nest as well as remains of a ground squirrel and a kangaroo rat. The whole outfit smelled like a glue factory. One egg is in-

fertile and is the most heavily marked egg of the set. The other three contained small embryos. The date was March 28th, and this was the first set of that year. This set of eggs measure respectively: 62x47.5; 61x47; 61x46. These measurements are in millimeters and the first is the infertile egg. Compared with the average of several sets of three eggs of the Eastern form of the Red-tail (62x49; 62x48; 64x49 mm.) they seem to be smaller, yet this is a set of noticeably large eggs as compared with about twenty other sets now in my collection, and collected by myself in the past two years. Four sets of Krider's Hawk, collected in Iowa, Texas, and Colorado seem to average smaller even than sets of the Western Red-tail, and are not marked so well either, though the Eastern Red-tail is far ahead of our form in matter of markings. Several sets of two eggs of the Western species which I now have are either entirely unmarked or else one egg has a very few faint dashes of rufous.

Harlan's Hawk has been taken here in the winter and not more than a year ago a pair were mounted by a Los Angeles Taxidermist, so I am constantly on the look out for them. Any one who has collected eggs of this bird and will favor me with good description or other notes will do me a favor for which I will pay either cash or specimens and I am sure such an article would be read with interest by collectors who subscribe—as who does not?—to the OÖLOGIST.

If robbed, our Red-tail will almost immediately commence a new nest for the reception of a second set, but will usually occupy the old nest the next year, seeming to become strongly attached to her home. In markings the sets of one pair of birds, *or of the female, if the male be shot*, persist in the same type, but not always in the same distinctness of coloration. One nest

of this bird at least was "unavailable" to me this season, though I haven't given up trying for it yet. It is in a sycamore just beside the road and fully seventy feet from the ground. About fifteen feet below it in the same tree is an old nest of the Hawk now occupied by a Pacific Horned Owl, which I suppose, has hatched her clutch by this time.

HARRY H DUNN,
April 10, 1901. Fullerton, Calif.

Gleanings from My Note Book. (Continued.)

May came in bright and clear, but cold, bringing a few King birds, and an Oriole whom I heard chattering but not singing at all. The cold wave reached its climax on the night of the 5th, when a freeze caused the drizzling rain to sheathe the grass and every shrub with fantastic icy forms which sent forth brilliant scintillations as "old Sol" came smiling up over the eastern hills the next morning. Even the set of Red-tailed Hawk that I collected at sunrise were covered with frost, for it seems that when I flushed the female from her nest several evenings ago, she never came back, so I had to be satisfied with two plain eggs.

I have noticed many times that neither the Red-tailed nor Red-shouldered Hawk will return to their nest when flushed from them after dark, even when incubation was well along as it was in this set.

As I left the woods I heard the clear, sweet warble of a Ruby-crowned Kinglet and soon I found him making his toilet as he sat on the sunny side of a pine tree on a dead branch.

No sooner had the cold snap passed away than arrived on the 6th, a great wave of migrants, and every moist woodland, whether on hill or in vale, resounded with melody far sweeter than words can describe. Yet from

secluded spot, or tree-top high, we hear those unobtrusive "Tsips" which mean so little to the unpractised ear, while to the eager ornithologist it brings visions of some new or rare bird.

Among them there were Redstarts, Maryland Yellowthroats, Black-throated Blue, Black-throated Green, Yellow-rumped, Magnolia, Oven-birds, Chestnut-sided and Black and White Warblers, White-crowned and White-throated Sparrows, Crested and Least Flycatchers, Catbirds, Bobolinks, Scarlet Tanager, and that little bundle of activity, the saucy Winter Wren.

May 9.—I spent this evening searching among the swampy hummocks where a pair of Wilson's Snipe are evidently nesting, but aside from being nearly flushed out of my rubber boots by an American Bittern who suddenly jumped up in front of me and uttered a terrified squawk, my search was uneventful.

May 12.—The corn stubble in swamp has become a most interesting spot, for here are gathered scores of Killdeers and Spotted Sandpipers, either species being capable of furnishing amusement as long as one cares to watch them, besides others of this kind have begun to appear. This morning I saw a Solitary Sandpiper walking daintily around the muddy pools. On the 18th a small flock of Least Sandpipers arrived, followed on the 19th by 15 Semipalmated Plovers, while on the 22d a beautiful male Black-bellied Plover spent the day here. A Least Flycatcher has been tugging away at the fluffy end of our clothes-line, working mostly morning and evening. The female did all the work, while the male followed close at her heels like an arrant taskmaster, his emphatic "che-beck" sounding more like a threatening "you-get," than an expression of encouragement.

May 29.—Appearances are sometimes very deceptive as was an evergreen tree in which I found a rather remark-

able state of affairs this morning. I was looking for a nest of Purple Finch and had walked around the tree without seeing any signs of nests, but to make sure I gave the tree a gentle number 8 kick which stirred up a lively rumpus indeed, for out of that tree went 6 jabbering House Sparrows, an excited Bronze Grackle and a more excited Robin. Upon climbing the tree I found a small bird village, consisting of 3 nests of English Sparrows, 1 of Bronze Grackle, and 1 of Robin—5 nests within a radius of 4 feet, and all containing either eggs or young.

June 5.—While trying to get in a good place to photograph a Black-billed Cuckoo on her nest I stumbled onto a nest of Maryland Yellowthroat containing 4 fresh eggs. The nest was placed upon a triangle of vines and weeds about 8 inches above the ground. It was a large bulky affair of dead leaves and grasses, lined with fine round grasses and horse-hair. This find so pleased me—for I do not often find a nest of this warbler—that I forgot all about the Cuckoo, who had sneaked away, but I got a fine photo of the Yellowthroat's nest and eggs "in situ."

June 7.—For some time I have heard the song of a Black and White Warbler, over in woods on hillside, along a bush lot, so this evening I went over purposely to hunt for their nest. I was passing along the edge of the woods, when I heard a rustle of dead leaves, and looking to one side I saw a Whippoorwill fluttering along, stopping however, about 6 feet away, with wings outspread in a wounded attitude. Quickly glancing about me I saw Oh! what I had hunted for for so many years, two beautiful eggs of Whippoorwill, reposing on a bed of dead leaves underneath a cluster of bushes, near a pile of dead brush.

I wanted a photo, of course, but had not brought my camera, so knowing the Whippoorwill's tendency to slip out

LATTIN'S CLEARANCE SALE.

SELECTED CORALS, SHELLS, MINERALS, CURIOS, RELICS, &c.

A Barrel of Shells and a Nature Study Collection.

Selected Specimens of Corals, Sea Shells, Minerals, Indian Relics, Curios, &c.

The Engraving on last page of this list illustrates many of the specimens offered on following pages. The numbers in () refer to the specimens in this engraving.

BRAIN CORAL, *Meandrina cerebriformis*, (No. 1.) a very fine specimen from the West Indies, 11 in. in diameter and weighing nearly 20 lbs. I will sell for only \$2.50; its worth more.

PALM CORAL, *Madrepora palmata*, (No. 2.) from the Bahamas. This specimen measures 10 x 12 in. and weighs about 6 lbs. Will sell for only \$1.75. I have another specimen of about same size, but more of a hand-shaped affair (thumb and fingers, tip of small finger broken) at same price. I also have about a dozen other specimens of this Coral at 35 cts., 50 cts. and \$1 each. All big values for the money.

PLATE (BRAIN) CORAL, *Meandrina clavosa*, (No. 3.) size 16 x 22 in. and weighs nearly 30 lbs. it goes at only \$4.50 I have another specimen more regular in form, 13 in. in diameter. My price is \$2.75. Both from the Bahamas.

PINE APPLE CORAL, *Porites astrooides*, (No. 4.) from Bahamas, 10 in. diameter, weighs 12 lbs; my price \$1.60 I have also a 7-in. specimen of this species, unbleached—"Niggerhead" Coral, at \$1.20.

PROPELLER or BUTTERFLY CORAL, *Agaricea agaricites*, (No. 6.) from Bahamas. This specimen measures about 12 in. and weighs 7 lbs. \$2.25 takes this specimen. In '99, secured a bbl. of this Coral and have about a "bushel" left. Can furnish nice "wing" specimens at 10, 15, 25, 35, 50 and 75 cts. each and have a few of the "butterfly" specimens at 35, 50 and 75 cts.

BRANCHING, TREE or SPIKE CORAL are terms by which the *Madrepora* Corals are commonly called. I have several bbls. of *Madrepora cervicornis*, (No. 7.) and can furnish specimens at any price from 1c. to \$1 each and can furnish schools or teachers in bulk at very reasonable rates. Its worth loose, without packing, about \$5 per bushel. I have also many of the rarer *Madreporas* and the following are of the close "spike" or "prong" form and not in long branches:

Madrepora spicifera from Samoa, 8 x 12 in., \$1.50; 5 x 9 in., 75c.; also an 18 x 15 in. specimen at \$3.50.

Madrepora obscura, a brown-colored species from Torres Straits, about 15 in. diameter, at

\$4.50 Could be broken up into 100 10c. specimens. Another 7-in *Madrepora*, white, from same locality at \$1.25.

Madrepora plantaginea from E. I., an 8-in. specimen at only \$1.20. I also have half a dozen clumps of *Madrepora* from Fiji Islands, ranging from 7 to 14 in. diameter, at \$1.50, \$2.50 and \$3.50 each.

Stylophora, a branching Coral from Red Sea, 5-in. clump, 75 cts; 7-in., \$1.50.

Madrepora abrotanoides, a 10-in. spray from Fiji, \$1.50.

Seriatopora, (No. 11.) from West Africa. This beautiful, delicate and almost perfect clump of Coral has been one of my star attractions for past two years. I have not cared to sell this specimen and have held it at \$10, and could have sold it a number of times had I been willing to shade the price a little; it cost me \$6 in cash and I will now sell at this figure.

ORGANPIPE CORAL, *Tubipora musica*, (No. 13.) from Singapore; this a section (1/2) of a clump, measuring about 9 x 11 in. and this section has been held at \$4.50. Will sell for \$3.25; another specimen, 8x10 in., at \$2.50. I have a case of this beautiful and interesting species direct from Singapore and can furnish selected specimens at following low rates: 2 in. 10c., 3 in. 25c., 4 in. 35c., 5 in. 50c., 6 in. \$1.

CORALS not shown in engraving. I have two mammoth Rose Corals, *Symphylia*, from Torres Straits; an 8 in. one at \$1.50 and a 5 1/2 in. one, more symmetrical and beautiful, at same price.

FEATHER CORAL, a 10 in. "bum" specimen 50c.

MUSHROOM CORALS. Fine specimens; 5 in. diameter of *Fungia patella* from Zanzibar at only 35 cts. each. Selected specimens of *Fungia elegans* from Gulf of Calif; 1 1/2 in., only 12c. prepaid.

CRATER or VASE CORAL, *Turbinaria cinerascens*, from Torres Straits, somewhat resembles the Neptune Cup Sponge, (No. 8) This specimen stands 10 in. high and measures 11 in. across top; a 3 in. triangular piece has been broken out of one side; will sell for \$2.50.

PINK CORALS, *Stylaster*, from Samoa, and the RED and YELLOW CORALS, *Distichopora*, from Hawaii. I have hundreds of specimens ranging from a few cents to 35 cts. in value.

PRECIOUS CORAL, *Corallium rubrum*, from Mediterranean Sea. A fine two in. clump in muddy matrix, with three specimens imbedded of *Megerlea truncata* (a Brachiopod of the Lamp Shell or *Terebratalia* Family.) My price for this specimen is \$1.90. I also have a quantity of this Precious Coral in polished twigs, such as are used to make into the good old-fashioned Coral Strings or "Beads," once so commonly used for neck adornment. We used to who-e sale this at \$8 per pound; will close out what I have left at 25 cts. per ounce or \$3 per pound. Samples 5 cts.

WORM "CORAL," *Vermetus* (No. 15.) A clump or mass of these peculiar worm-like shells from the W. I., measuring 5 x 7 in. and weighing 2 lbs.; could be made into hundreds of small specimens; \$2.60.

NEPTUNE'S CUP or Vase Sponge, *Paterion* (No. 8), from Tasmania. An odd and curious specimen worth from \$15 to \$20, and we have always held this specimen at \$10. It measures 24 in. high and the vase portion is 12 in. in diam. It now goes for only \$6.80. Its a bargain for one who want such a specimen.

AN EGYPTIAN IDOL, (No. 21), carved from stone or lava 1,000 or more years ago, represents an elephant or some other animal, measures about 4 x 2½ in. Secured by a missionary acquaintance from a mummy pit in Egypt and guaranteed genuine. Only \$3.05.

CHINESE CURIOS.

CHINESE GOD (No. 5) of white porcelain, 6½ in. high, from the collection of an old Chinese traveller. My price is \$1.90. I also have a Chinese cash sword at \$1.60. Shuttle cock of feathers, snakeskin and "cash" 45 cts. prepaid.

SNUFF BOTTLES, size about 2 x 2½ in. No. 1, pottery, ornamented, etc., 45c, prepaid; No. 2, Jade, carved and ornamented, \$1.35, prepaid.

STONE WATER VESSEL, 1 x 2½ in. of brown mottled "Jade," 65 cts., prepaid.

OPIUM PIPES, No. 1, (No. 16) 24 in. ebony stem, 4 in. brass mouth piece, brought by sea captain from China, \$1.60, prepaid; No. 2, (No. 21) bone mouth piece, 18 in. bamboo stem, 90 cts., prepaid; No. 3, pipe only, (bowl) 40 cts., prepaid.

SPANISH CROSS inlaid with straw from an ancient church in Jemez, New Mex. Curio dealers would ask \$5 for it, but it's yours, prepaid, for \$1.45.

SAWFISH SAW (No. 23) This specimen is the one next to Coral specimen No. 3, and measures three ft. in length. It's worth \$3.25. The others in engraving have been sold. I also have two small specimens with snout or head back of eyes attached, 10 in. spec. 75 cts., prepaid; 12 in. spec., \$1.40, prepaid; all from Gulf Mexico.

SHARK JAW from Martha's Vineyard. A small but fine and perfect specimen. About 4 x 7 in., with nearly 150 teeth. Only \$1.80, prepaid.

ALLIGATOR (No. 30.) This 5 ft. specimen was from west coast Florida and was one of the finest specimens I ever saw. I purchased it at the Atlanta Expo. in '95, and has been a constant companion in my experegrinations in the north since that date. I've sold dozens of others, but I've always "hung on" to this specimen. It's but little the worse for travel. My price has been \$10. Now \$6.50.

ALLIGATOR TEETH 15 to 20 years ago alligators were abundant. The swamps and streams of Florida was fairly alive with them. Their teeth were used by the hundreds of pounds for jewellery purposes and good teeth were staple as flour or sugar at \$2 per lb. A pound of ½ to 1 in. teeth numbers over 1,000 (about 1,200) teeth and represents the product secured from 15 or 16 alligators ranging from 5 to 12 ft. long. The craze for the jewellery has

waned in most sections and I have many pounds of teeth on my hands. To close them out I will sell single pounds at only 50cts; 5 lbs. for \$3; or 10 lbs for only \$3. Just think of it, over 10,000 teeth, which r-present the entire product from over 150 large alligators for only \$3.

SHELL AND MOSS WREATH (No. 24) Made from the beautiful sea mosses and small shells from the California coast. In box 16 x 20 in. these wreaths sold at the World's Fair at \$20 each. A few of the petals, etc., have been loosened through shipping. My price only \$4.60

EGGS OF THE EMEU (No. 28.) Nothing attracts greater attention in the egg line than the large dark green, nearly black, pebbled egg with a lighter ground color of this peculiar Australian bird. Every egg collection would have contained one of these egg- and even the laity would have had them on their "what-nots" or among their "bric a-brac" had not the price—which has always been \$2.50—been a little too high. We now have a limited supply at only 84 cts. each, prepaid. This rate will hold until May 1st, only. I have a few cracked specimens and a few casts at 50 cts. each.

OSTRICH EGGS (No. 27.) Stock all sold. Can secure fair specimens at \$1 each. Have a few good 2ds. at 60 cts., a few badly damaged specimens at 30 cts. and have one large flattened warp-sided abnormality at \$1.60.

PIPE-FISH, *Syngnathus*, (No. 31) from Gulf California. We have a few choice specimens of this queer and rare fish, with bony armor, the first lot we ever secured in sufficient quantity to place on sale. Prices, prepaid, at following ridiculously low rates: Specimens under 10 in., 30 cts.; 10 in., 40 cts.; 11 in., 45 cts.; 12 in., 50 cts.; 13 in., 60 cts.; 14 in., 75 cts.; 15 in., \$1.

THE SEA HORSES, *Hippocampus*, are also of same order as the pipe fish and with bony armor. We have choice specimens of both the Atlantic and Pacific species. Prices of either, prepaid, 15 to 35 cts. each.

PAPER NAUTILUS, *Argonauta Nodosa*, (No. 22.) This beautiful \$10 specimen has been sold. We have a few small specimens of the ordinary *Argonauta Argo* from the Mediterranean Sea, at 50 cts. each, prepaid.

CHAMBERED NAUTILUS, *Nautilus pompilius*, from Polynesia. Decorated specimens (No. 9.) This mammoth 9 in. specimen, with lip checked, \$3.25; ordinary 6 to 8 in. specimens, \$1.25 to \$2.50 each. Specimens 5 to 6 in. in natural condition, 50 cts. to \$1 each; specimens bisected to show structure, (No. 32) both halves, 75 cts. to \$1.50; siphuncle, ½, 50 cts. to \$1; the half not showing siphuncle, 35 cts. to 75 cts. I also have a lot of broken and damaged shells, valuable for teaching, etc. Will close out at only 25 cts. each. First orders secure best specimens. I also have one very fine bisected shell with animal in glass jar containing alcohol, (No. 17) from Western Polynesia. A rare specimen and seen only in a few of our larger museums. It cost me \$9 as a dealer. Will sell for \$7.75. I have a beautiful 4½ in. specimen of *Nautilus umbilicus* from Australia at \$1; lip checked.

CHRYSANTHEMUM SHELL OR THORNY OYSTER, *Spondylus pictorum*, (Nos. 12 and 16) from Gulf of California. These beautiful shells usually sell at \$2 to \$3 each and range all colors from pure white to bright red. I have a few left and will close out at \$1 each. I have a few foreign specimens of this family from East Indies, etc., at 50 cts. each; worth regular up to \$3. First orders best specimens; have 3 or 4 species, as *aurantia*, *wrightii*, *purpuraceus*, etc.

TRUMPET SHELL, *Triton tritonis*, (No. 25) from Indian Ocean. Used as a teakettle by the natives of the Typusan Archipeligo. This specimen is 16 in. long and was used for this or a similar purpose; \$3.25. The other specimen in engraving also has holes through shell for or-

namental or some other purpose; \$2.20. I also have a few very fine specimens of this shell at following low rates: 6 in. specimen, 50 cts.; 8 in., 75 cts.; 10 in., \$1 to \$1.50; 12 in., \$1.50 to \$2; 15 in., \$3. I also have a couple baby specimens 2-3 in. at 35 cts. each, prepaid.

SHELL VASE (No. 14) made from large specimens of Green Snail, Turbo marmoratus, from Philippines. These vases are made from selected 5 to 6 in. shells and are worth \$1.50 each. I also have from same shell vases, basket style, with carved handles, etc., all in one piece, at only \$1.50. I can also furnish these shells, with Lord's Prayer engraved on, or made into call bells at \$1.50. (Regular price of all these \$1.50 articles is \$2.) Shell vases of same shell similar to (14) made from 3 to 3½ in. shells, worth 50 cts. each; prepaid, only 35 cts. Shell napkin rings from sections of this shell, plain 15 to 25 cts., prepaid; engraved, 25 to 35 cts., prepaid; small 3 in. shells of this species in natural condition at 15 cts. each, prepaid.

SIoux TENT. Child's play-tent, 15-5 ft. Willow tent poles (No. 26) Tent cloth or cover measures, unpitched, two extremes—about 3 x 10 ft. It is spread on three top steps of engraving. Material of common factory and decorated in colors by some Sioux artist. This is guaranteed genuine and has been in my possession for 8 or 10 years. My price is \$3.80, and its well worth double. The Sioux Pie (No. 20) has been sold. I have, however, a similar one, length 14½ in., both stem and bowl of red Catlinite or Pipestone, Indian make, unu ed, angular and more ornamental than No 20. My price \$1.90.

INDIAN BASKETS made by the Hoopa Indians of Humboldt Co. Calif., from natural fibres, artistically woven and arranged in colors, water tight, bowl shape. The Indians sell them "on the ground" at \$5 each. I have the following sizes and will send, prepaid, at prices named: 3 in. deep by 7 in. diam., \$3 15; 3½ in. deep by 7½ in. diam., \$3.60; 3¾ in. deep by 8½ in. diam., \$4.10. I consider the best the cheapest.

AZTEC PITCHER. Genuine aztec and purchased from Mexican Village at Atlanta in '95, with a guarantee that it was the ancient. I believe, however, that it was made recently by descendants of the ancient aztecs. Material black clay and covered with carvings, faces, etc.; \$2.60.

MOOND BUILDER'S RELICS. I have hundreds of ordinary arrow and spear heads and a few of the more common pieces such as sinkers, drills, scrapers, etc., but have very few of the rare and desirable ones. The following covers what I have left: Stone Pipe, (Hornblende or hard mica schist) (No. 19) size 2x4 in., wgt. ½ lb., from Brant Co., Ont., a very choice specimen, \$5.10, prepaid; another from same locality of a more common and unattractive form, 3½ x 2 in., 7 oz., hatchet shape, \$2.20, prepaid; Slate Pendant from Waterloo Co., Ont., 2 in. diamond shape, drilled, prepaid 70 cts.; Hematite (Limonite) Celt from Van Buren Co., Ark., 2 x 5 in., 1 lb., prepaid, only \$1.20. Ordinary Stone Axe from Cumberland Co., N. J., (Serpentine, grooved, 4 x 5½ in., 2½ lbs.) \$1.30. I also have the contents of a cache from Rowan Co., N. C., consisting of about 375 unnotched arrow or spearheads of uniform size and form, about 2½ long, will sell as a whole for only \$28-10.

CELTS. Various sizes and material from near Baum Village site, Paint Creek Valley, O., at from 45 cts. to \$1 each, prepaid.

NET SINKERS made from Iron-stone, Limonite, Concretions, Van Buren Co., Ark., weighing from ¾ to 1 lb. and measuring 2¼ to 3¼ by 3¼ to 4¼ in., each 45 cts.

PESTLE of quartzite from Ky., 1½ lbs., 2½ x 4½ in., 85 cts.

ARROWHEADS. Van Buren Co., Ark., assorted; poor, per doz., 30 cts.; ordinary, 60 cts.; selected, \$1.

BIRD ARROWPOINTS. Same locality, 9c. to 24 cts each, prepaid.

BIRD ARROWPOINTS. The famous little beauties of jasper, chalcedony, obsidian, etc., from Willmette Valley, Oregon. I have a few ordinary ones left at 15 to 25 cts. each, or 5 assorted for \$1.10, prepaid.

POTTER fragments with markings, 6 pcs., Ky. and N. Y., lot 40 cts.

FIVE good jasper and flint arrowheads from Mo., lot 50., prepaid.

EIGHT damaged pcs. Rowan Co., No. Car., lot 25c., prepaid.

FOURTEEN white flint arrowheads from Englewood, Ills., fair lot; lot, prepaid, 95 cts.

MILKY QUARTZ DRILL, So. Car., 1½ in., made from broken arrowhead, 75 cts., prepaid.

GLASSY QUARTZ, leaf shape arrowhead, So Car., fair, 35 cts., prepaid.

SCRAPERS. Nine small ordinary ones from So. Dak., chalcedony, etc., lot, prepaid, \$1.

OVAL DISC shaped, pc. from Ind., 2 x 2½ in., 23c., prepaid.

SLATE ORNAMENT, Waterloo Co., Ont., round, 2 in. diam., hole in center, 85c., prepaid.

SANDSTONE ORNAMENT, Orleans Co., N. Y., very rare, unattractive and not ornamental, 3¼ in. diam., about 40 tally marks, one perforation, another partially through, \$2.10, prepaid.

SPEARHEADS, Orleans Co., N. Y., rare in locality, 3 in., lot (two), prepaid, 75 cts.

CUMBERLAND CO., N. J. One knife and eleven selected arrowheads, lot, prepaid, \$1.25.

MONTGOMERY CO., PENNA. A selected lot of ten pieces of Jasper and quartzite, as follows: 1 draw knife (?), 1 scraper 2 small warclub heads, 6 arrow or spearheads; lot, prepaid, \$2.10.

BONE NECKLACE. Thirty-two perforated (lengthwise) phalangeal bones from an Indian burial ground in Oxford Co., Canada, prepaid, \$3.60.

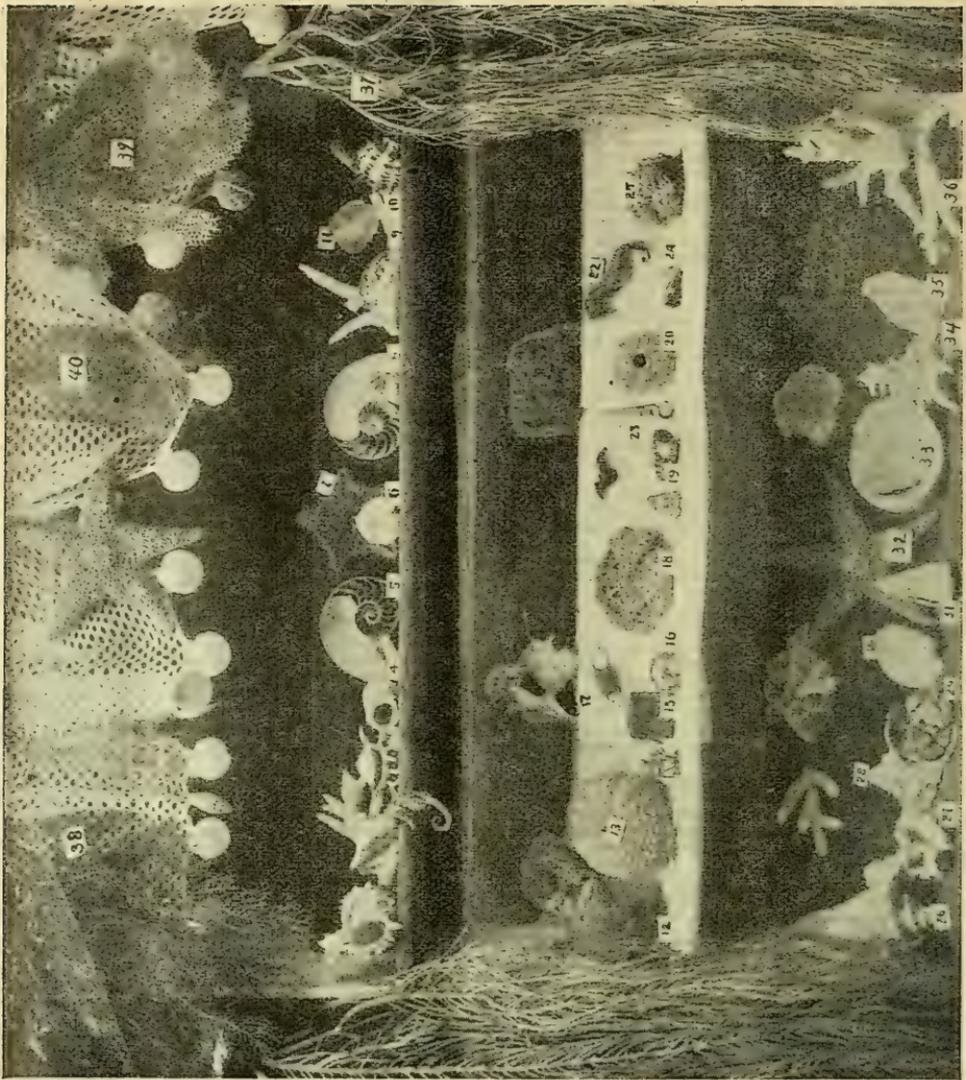
BOTRYOIDAL GROUP OF CALCITES (No. 10) This magnificent specimen measures about 10 x 15 in. and weighs over 20 lbs. It was taken from a pool of pure water in Crystal Cave, Black Hills. This form is not known elsewhere in the world. Beautiful lemon yellow botryoidal groups of compound and contact thickly studded, small 3-cornered xtals, well worth \$15, but will sell for only \$8.90.

JOPLIN CALCITES are the most superb rich yellow, with deep brownish base, calcites in the world and occur in single xtals; low, broad scalenohedrons, sharp angles, six-sided, six-faceted, with modifications very pleasing, brilliant, natural polish; translucent ice-like appearance. I have a single crystal, which weighs 28 lbs., and measures 10 x 18 in. It ought to be worth \$1 per pound, but I'll sell for \$9.30. I have another but smaller Joplin xtal nearly doubly-terminated, measures 6 x 11 in. and weighs over 12 lbs. and goes at \$4.30.

NATIVE COPPER from Lake Superior. The globe, No. 33, was filled with selected specimens in acid, but old zero broke the globe and we can furnish the ragged thread-like specimens separately at 25 cts., 35 cts., 50 cts. and \$1 each, prepaid.

HOT SPRING QUARTZ XTALS. Have a few left at 15c., 25c and 35c. each, prepaid; and one 6 lb. 5 x 9 in. clump xtal, with group-like base at \$1.60.

RUBELLITE. I have a splendid assortment of specimens of this beautiful bright rose tourmaline, needle-like xtals, usually arranged so that dozens will radiate from a single center in a gangue of lavender Lepidolite and found in San Diego Co., Calif.: ½ lb. specimens, 30 cts.; 1 lb. specimens, 55 cts.; 1½ to 2 lb. specimens, \$1; 5 lb. specimens, \$2.50. I have one beautiful museum specimen, which measures 8 x 10 in. and weighs 14 lbs., at \$5.40.



THE ABOVE ENGRAVING SHOWS ONE OF LATTIN'S
 PAN-AMERICAN
 NATURE STUDY COLLECTIONS
 DISPLAYED IN A 4x4 FOOT SPACE.

This Collection will be Appreciated by EVERY STUDENT, TEACHER, COLLECTOR AND AMATEUR, and is of Special Value in Nature Study Work.

Lattin's Pan-American NATURE STUDY COLLECTION.

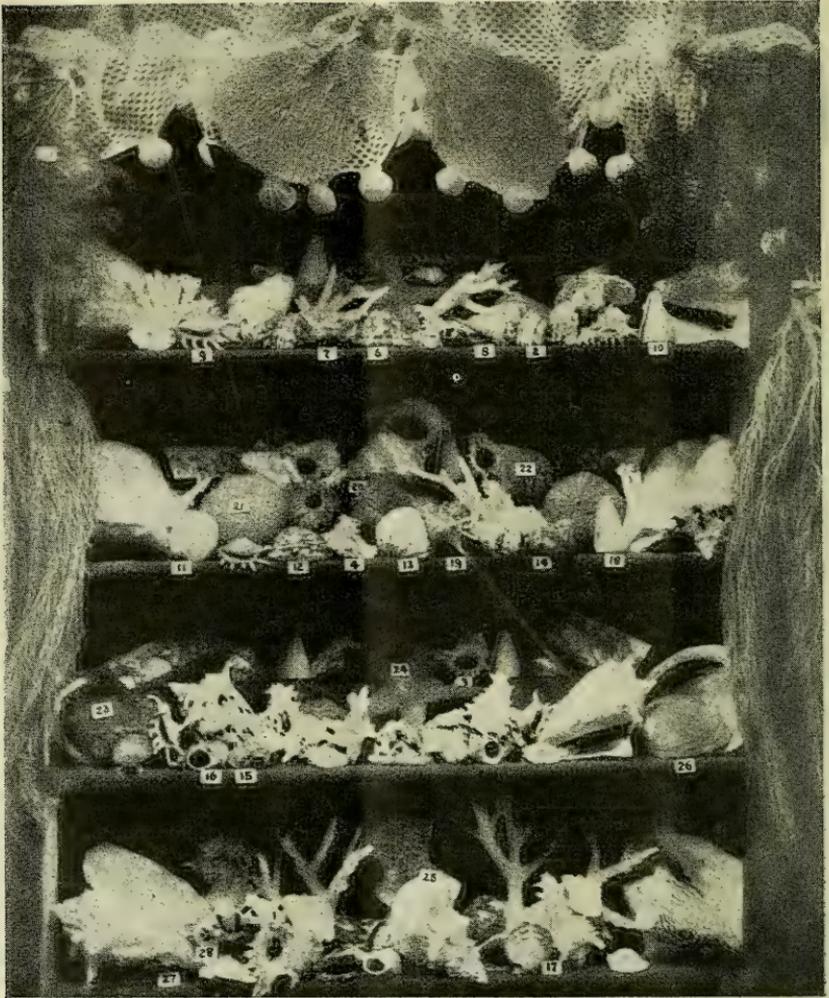
This Collection contains specimens selected with special care in order that the Collection, as a whole, would not only be of value to the Specimen Collector in building or adding to a cabinet, but have endeavored to make it practically indispensable in Nature Study Work, both to teacher and student.

As many may not wish to purchase the entire Collection, I quote the regular price on each specimen and also my *prepaid* Clearance Sale price.

The entire Collection at regular retail rates would cost \$11; at my special *prepaid* rates if purchased separately 5.19.

I will deliver the *entire Collection* f. o. b., freight or express, Albion, N. Y., carefully and securely packed and boxed for **only \$2.78.**

| No. | Regular Price. | Lattin's Prepaid Price. | Description | Price | Price |
|-----|----------------|-------------------------|--|-------|-------|
| 1 | | | 20 Purple-spined Sea Urchin, <i>Strongylocentrotus drobachiensis</i> , Gulf Mexico, 3½in..... | 25 | 09 |
| 1 | | \$ 35 | 21 Horn Nut, China, 2¼in..... | 10 | 04 |
| 2 | | 15 | 22 Sea Horse, <i>Hippocampus Hudsonius</i> , Delaware Bay, 4in..... | 35 | 11 |
| 3 | | 15 | 23 Screw Shell, <i>Turritella croc a</i> , Panama, 3in..... | 15 | 06 |
| 4 | | 15 | 24 Native Lodestone, Magnet Cove, Ark., 2in..... | 25 | 09 |
| 5 | | 75 | 25 Resurrection Plant, Mexico..... | 15 | 06 |
| 6 | | 25 | 26 Young Corch, <i>Strombus gigas</i> , Bahamas, 5in..... | 25 | 13 |
| 7 | | 35 | 27 Propellor Coral, <i>Agaricea agaricites</i> , Bahamas, 5in..... | 35 | 22 |
| 8 | | 35 | 28 Coquina Shell Conglomerate, St. Augustine, Fla., 3in..... | 25 | 09 |
| 9 | | 15 | 29a Fossil Scaphites, (Nautilus Family) Custer Co., Montana, 2in..... | 35 | 11 |
| 10 | | 35 | 30 Venus Clam, <i>Chione gnidia</i> , Gulf Calif., 3in..... | 25 | 11 |
| 11 | | 10 | 31 Lettered Cone, <i>Conus literatus</i> , Ceylon, 3in..... | 35 | 19 |
| 12a | | 35 | 32 Golden Starfish, <i>Asterias ochracea</i> , Calif., 7in..... | 35 | 19 |
| 13 | | 35 | 33 Black Ear, <i>Haliotis cracherodii</i> Japan, 3½in..... | 25 | 08 |
| 14 | | 25 | 34 White Murex, <i>Murex ramosus</i> , Zanzibar, 4½in..... | 25 | 14 |
| 15a | | 35 | 35 "Electric Stone," "Hell Fire Rock," a variety of Tremolite so highly charged with phosphoric acid that a light scratch in dark emits a play of lights, 3in..... | 25 | 09 |
| 16 | | 25 | 36 Branch Coral, <i>Madrepora cervicornis</i> , Bahamas, 7in. Branch | 25 | 16 |
| 17 | | 10 | 37 Sea Fern, <i>Pterogorgia setosa</i> , Key West, 3ft..... | 50 | 21 |
| 18 | | 35 | 38 Golden Sea Fan, Panama, 15in..... | 35 | 21 |
| 19 | | 25 | 39 Yellow Sea Fan, <i>Rhipidogorgia occatoria</i> , Bahamas, 12in..... | 25 | 14 |
| | | 25 | 40 Sertularia, Atlantic City, N.J..... | 15 | 08 |
| 2 | | | 2 Pearl Conch, <i>Strombus granulatus</i> , Panama, 2½in..... | | |
| 3 | | | 3 Orange Scorpion, <i>Pterocera aurantia</i> , Philippines, 4in..... | | |
| 4 | | | 4 Goldmouth, <i>Turbo chrysostomus</i> , Philippines, 2in..... | | |
| 5 | | | 5 Chambered Nautilus, <i>Nautilus pompilius</i> , E. I., ½ of bisected shell to show structure, etc., 5in..... | | |
| 6 | | | 6 Mushroom Coral, <i>Fungia elegans</i> , Gulf Calif., 2in..... | | |
| 7 | | | 7 Armor Starfish, <i>Nidorella armata</i> , Panama, 5in..... | | |
| 8 | | | 8 Black-mouth Tree Snail, <i>Oxytylea undata var floridensis</i> , Florida, 2in..... | | |
| 9 | | | 9 Tiger Cowry, <i>Cypraea tigris</i> , Australia, 3in..... | | |
| 10 | | | 10 Black Murex, <i>Murex radix</i> , Panama, 4in..... | | |
| 11 | | | 11 Tarpon Scale, Florida, (2 spe) 2in..... | | |
| 12a | | | 12a Compass or Sunflower Starfish, <i>Helioaster Kubingii</i> , Chili, 4in..... | | |
| 13 | | | 13 Mammoth Sea Urchin, <i>Strongylocentrotus franciscanus</i> , Pacific, 4in..... | | |
| 14 | | | 14 Pink Coral, <i>Syngaster sanguineus</i> , Samoa, 2½in..... | | |
| 15a | | | 15a Orange Scorpion Shell. Cut to illustrate structure, 4½in., select..... | | |
| 16 | | | 16 Silvermouth, <i>Turbo tessellatus</i> , Gulf Calif., 2¼in..... | | |
| 17 | | | 17 Egg of Skate or Sand Shark, Martha's Vineyard, 4in..... | | |
| 18 | | | 18 Organpipe Coral, <i>Tubipora musica</i> , Singapore, 3in..... | | |
| 19 | | | 19 Fossil Polyp Coral, <i>Helioplyllum</i> , Genessee Co., N. Y., 2in. (41b)..... | | |



THE ABOVE ILLUSTRATION SHOWS ONE OF LATTIN'S

TWENTIETH CENTURY

.... BARRELS OF SHELLS

CROWDED INTO A 4X5 FOOT SPACE.

TO PROPERLY DISPLAY WOULD REQUIRE A MUCH LARGER SPACE.

Our Twentieth Century

Barrel OF Shells

In my list offering a "Barrel of Shells" six years ago ('95) I quote:

"From time memorial it has been customary for shell dealers to put up a barrel of shells for others to sell again. \$25 or \$30 is a favorite price for one of these barrel collections, in fact a good selection of saleable material cannot be sold at a living profit at a lower price. 'Lattin' has been in the shell business for the past fifteen years. '95 makes his 9th consecutive season at Chautauqua (where he has exclusive right). His 'Fair' trade is and has been one of the heaviest in the U. S., and at the World's FAIR 'LATTIN' personally sold more shells than all other dealers combined—the statements may seem strong but they are facts nevertheless." At that time I offered a "barrel of shells" to dealers only.

The "Twentieth Century Barrel of Shells" has been put up from an entirely different standpoint; and while I expect to sell more barrels to dealers than to others it will be due to the fact that they realize more fully the exceptional bargain I am offering in giving a greater variety and making a lower rate than they were ever able to previously secure.

I have about 25 of these Twentieth Century Barrel of Shells. The engraving on preceding page does not do the collection justice. It was my original intention to have the different specimens numbered in order that one could get an idea of each variety from the engraving but I find that the reduction in size is so great that the carrying out of my original intention is out of the question.

This "barrel" has been arranged, however, so as to be of value to anyone, and especially so for those wishing to get a nice assortment of shells, etc., and be able to sell enough from the residue to make their own cost little or nothing. This assortment is of value to the collector or teacher and of special value for school work. It's needless to add or say more as to its value to the dealer or to those who wish a selection to sell again. I might call attention, however to its great value, if properly displayed, as a store window attraction and for ornamental purposes. An up-to-date merchant can use it as an attraction for a few weeks and then sell at 1/2 usual prices and realize a good profit. It is also of special value to place on sale and as an attraction at a Church or Lodge Fair booth, etc., etc.

For whatever purpose you purchase this assortment you will find it one of the biggest investments in the shell line that you ever made for the money. You will also find that the assortment contains no "dead wood."

Each variety is plainly labeled and a good sized cardboard label is also sent for each variety, giving common and scientific names and locality, making the assortment doubly valuable for display purposes.

The assortment is made up as follows:

| | |
|--|-------|
| 2 Large Pink Conchs..... | \$ 75 |
| 2 Pink Conch Points..... | 75 |
| 4 Young Conchs..... | 50 |
| 1 E. I. Clam..... | 50 |
| 2 E. I. Clams..... | 50 |
| 4 White Murex..... | 60 |
| 2 White Murex..... | 50 |
| 3 Pink Murex..... | 50 |
| 2 Pink Murex..... | 75 |
| 2 Black Murex..... | 50 |
| 1 Black Murex..... | 50 |
| 1 Grandmother Shell..... | 1 00 |
| 1 Grandmother Shell..... | 35 |
| 1 Violet-mouth Scorpion..... | 50 |
| 1 Orange Scorpion cut to show structure..... | 35 |
| 1 Tent Olive..... | 75 |
| 2 Green Snail..... | 50 |
| 2 Tiger Cowry..... | 35 |
| 1 Marlinspike..... | 50 |
| 2 Mother of Pearl..... | 50 |
| 4 Lettered Conch..... | 1 00 |
| 2 White Spindle Shells..... | 50 |
| 2 Venus Shells..... | 50 |
| 5 Fighting Shells..... | 50 |
| 5 Pearl Conchs..... | 50 |
| 5 Silverlips..... | 50 |
| 5 Goldmouths..... | 50 |
| 5 Silvermouths..... | 50 |
| 5 Orange Scorpions..... | 50 |
| 5 Black Ears..... | 50 |
| 5 Screw Shells..... | 50 |
| 5 Banded Murex..... | 50 |
| 5 Lettered Olives..... | 50 |
| 4 Boxes of assorted Small Shells..... | 1 00 |
| 1 Sea Horse..... | 35 |
| 1 Armor Starfish..... | 35 |
| 1 Golden Starfish..... | 35 |
| 3 Compass Starfish..... | 75 |
| 2 Mammoth Sea Urchins..... | 50 |
| Lot of assorted pieces W. I. White Branch Coral..... | 2 00 |
| Lot Organpipe Coral..... | 1 00 |
| 2 Purple Sea Ferns..... | 50 |
| 2 Purple Sea Ferns..... | 1 50 |
| 2 Yellow Sea Fans..... | 50 |
| 2 Yellow Sea Fans..... | 50 |
| 2 Golden Sea Fans..... | 75 |

This assortment of shells, etc., at low rates will sell for not less than \$28.00. I will pack the entire lot in a barrel and deliver f. o. b. express or freight, Albion, N. Y., for only \$7.80. It's worth nearly double this figure at low wholesale rates, and is the biggest bargain in showy material in the Shell and Coral line I have ever seen in my 20 years' career as a dealer and jobber in Sea Shells, etc.

Address plainly and in full,

FRANK H. LATTIN, M. D.,
Albion, N. Y.



THE ABOVE ENGRAVING ILLUSTRATES

A FEW SELECTED SPECIMENS

OFFERED ON FIRST PAGES OF THIS LIST.

with her household effects, if disturbed, I covered the eggs with my coat and hustled home after my camera and took them "in situ." Although I use the most rapid plates yet I had to make the exposure 8 seconds on account of the gathering gloom in the woods. The eggs were nearly hatched, but never did an oölogist use more time, patience and pancreatin, than did I, but with all my care I could only save one egg.

June 21.—How queer it is—a solemn fact though—that one is forever surprising himself by finding just what he is not looking for. Here I've found quite accidentally the nests of two species that I've searched for so many times without success. This fact was again illustrated on June 21 while photographing an Ovenbird on nest. I was out in the woods at 5 a. m., and when I arrived at the nest the Ovenbird was out to breakfast, so I took photo of nest and eggs "in situ." I had just finished when she came walking homeward with dainty, mincing steps, turning aside here and there for little bunches of grass or a dead limb. With camera about six feet away she came peering around the nest, her sparkling, beady eyes seeming to express anxiety, which did not pass away even when I requested her to "look pleasant."

While folding my camera I heard the "hum" of a Hummingbird, overhead in the oaks and I began to realize that a nest was near, for judging by the "hum" or "buzz" it sounded like a Hummingbird from the nest a foot or so, and darting back. A glance upward revealed the tiny bird humming around her home, on the crotch of a dead limb, about 5 feet from the body of a slender oak, and 30 feet above the ground. She seemed to be nervous because of my presence and kept turning her head sidewise, and peering at me over the rim of her little gem of lichens, spider's web and cottony stuff. There

were two slightly incubated eggs and they now are in my collection.

There is another solemn fact that I always think of as a sort of "hoodoo" and that is to have some misfortune befall a new find. Either some "varmint" will destroy the nest before the set is complete, or else some self-inflicted accident will happen.

I well remember the first set of Chestnut-sided Warbler that I found. I had succeeded in safely packing 3 of the eggs and had the fourth egg between my "first thumb and second finger" when a mosquito lit on my thumb and aroused my feelings—even more than the offended Warblers—which caused me to raise my hand, let it fall down upon the mosquito, smashing him into "smithereens" and incidentally the egg.

C. F. STONE,
Branchport, N. Y.

Iowa Notes.

"Oh! what so rare as a day in June?" Sometimes we ornithologists think that the early spring when the birds begin to arrive from the sunny south, is just as pleasant a time of the year, for after the dreary months of our severe winters, we are glad to greet our feathered friends once more.

On the 13th of March I heard the first Bluebird of the season. While on my way to work in the morning I passed a small creek bordered on either side by willows, and from some where there came the unmistakable notes of our first spring arrival. A cold northwest wind was blowing at the time and snow and rain fell incessantly. The thermometer registered 36 degrees above zero all day.

About the middle of the forenoon on the same day I saw a small flock of Red-winged Blackbirds flying high in air toward the south. Evidently their northward journey was begun a little

too early, and they had discovered the fact in short order.

A flock of geese was seen flying northward at noon, but they became discouraged at the snow, rain and wind which they encountered and struck off to the east in a driving rain.

At one o'clock in the afternoon seven Bluebirds were seen near Cedar Lake. They were on the south side of a willow covered bluff. The wind still blew coldly from the northwest, and snow was falling at the time they were seen.

Sunday March 17th, I heard a Robin singing. There seems to be a scarcity of Robins this spring, this being the only one I have heard to date, (March 20th,) but their ranks are filled with a goodly number of Bluebirds. I am very glad to note the increase of Bluebirds. Last season I found a pair breeding in an old stump near my home, but this was the only nest found for several seasons.

Every ornithologist should have a camera. A good photograph of a bird, nest or eggs can tell more of the beauty of Nature than words can express or tongue can tell. The amateur "bird-ologist" will find the camera a great help in his study of bird life and bird-architecture.

A few days ago the writer hunted up his climbers, blow-pipes, egg-boxes, drills, etc., and after looking them over and cleaning them, put them away where they could be found at a moments notice. The time will soon come when they will be needed, and it is best to have them ready beforehand.

I heard a Meadow-lark on the 18th of this month (March.) These larks are quite common during the nesting season, and their presence at this time of the year is a sure sign that spring is at hand. Several Red-winged Blackbirds were serenading the sun in the early morning with their "kon-ker-ree." Song Sparrows also sang in the shrubbery along the lake shore.

The writer has a unique way of identifying birds for field use. It is a small book with alternating blank and ruled leaves. The left page being blank, and the right ruled. When a strange bird is seen, a rough outline of it is made on the blank page and then colored with colored lead pencils. A description of the bird is written on the ruled page, and it is very useful in identifying the specimen at hand. With this book in your *panjamas*, a pair of opera glasses, and a good "key" with you, or at home, identification is made quite easy. Of course the exact colors cannot always be used, but they can be made near enough to serve the purpose.

GLEN M. HATHORN,
Cedar Rapids, Ia.

Loxgilla portoricensis.

I first met this bird in the hills back of Catana and Bayamon across the bay from San Juan during the spring and summer of '99. In a three months' sojourn in the Island of Vieques I did not observe it and do not think it occurs. At Aguadilla during the summer of 1900 I found it common and again at Mayaguez the succeeding autumn and winter. In the brush of the lower hillsides near San Juan Bay it seemed to evince no evidence of shyness or seclusion and was readily approached and taken, but around Aguachilla and Mayaguez I found the opposite to be the base.

A male skin now before me measurns six and one half inches in length. The color is a uniform blue-black with purplish reflections. A patch of Venetian red of light shade covers the crown extending to eyes and base of bill and continuing in two slight stripes three-eighths' inch down on neck. Another patch of same color and oval shape covers throat and upper breast, measuring one and five-eighths inches from base of lower mandibles. A third

patch of this same color covers under tail coverts.

The bill is rather short, though far less so than many of the Grosbeaks. The culmen measures five-eighths inch. The female is almost uniformly of an olive brown color with chestnut under tail coverts; the wing quills and tail feathers are dark brown, almost black, but edged with the same color brown as the rest of the plumage. The young of both sexes resemble the female.

The flight is slightly bounding with successive, strong, separate strokes. The song reminds one forcibly of an exaggerated edition of the Song Sparrow's and the alarm notes are sparrow-like. I have heard the song just before twilight when the resemblance to that of the Song Sparrow was quite striking. Their food is largely vegetable, but probably insects make up some part of it. In a hasty review of my note book I find record only of seeds and buds, but I am quite sure I have examined stomachs containing insect remains.

The female Grosbeak is much shyer than the male and I have never had a good opportunity of watching her ways. The male is often found feeding on the hillsides and among the bushes without one being able to find the least trace of a female near.

The nesting habits I know only by one nest found on June 15, 1900, in a narrow bushy pass between two hills near Aguadilla. It was built at an elevation of about 8 feet; placed in a clump of twigs against the body of a small tree. In appearance it was much like an enlarged edition of the nest of *Euthia bicolor*, being bell-shaped with entrance in the side. It was composed of weed and vine stems, dead leaves, and skeletons of leaves, and measured externally 7x3 inches in depth, the latter measurement being to lower edge of entrance, the former to top of dome, —and 6½ inches in diameter. The in-

side dimensions were: Depth, 2 inches; diameter, 3 inches.

The eggs were three in number and I sent nest and eggs to the U. S. National Museum without taking measurements or description, so must describe from memory. They were fresh and I should say about the size of the Cardinals', of a light blue ground, and quite evenly and thickly sprinkled with fine dots of reddish brown.

On June 13, 1900, I secured near this same spot a young female in immature plumage. Stomach's contents were small round weed seeds.

B. S. BOWDISH.

Pan-American Notes.

If you don't know just where to go next summer you can't make any mistake in going to the Pan-American Exposition.

The superb collections made in the far northwest by the Alaska Geographical Society will possibly be shown at the Pan-American Exposition.

The best mineral exhibit ever made by Canada will be seen at the Pan-American Exposition. Mine owners and prospectors are giving the Bureau of Mines hearty co-operation in their collection of specimens for this display.

The Bird Protective Association of America proposes to make an exhibit at the Pan-American Exposition which will be of great interest and general value to all agriculturists, particularly those interested in the forest and shade trees. The exhibit will consist of infected sections of various kinds of trees on which will be mounted the destroying insects in their various stages of development, and the birds that devour them.

The bird and insect life will be represented in a natural way, thereby illustrating the great value of bird life to all forms of vegetation. It will be the first exhibit of this nature ever made at an exposition, and it is intended to make it a most useful feature of the Pan-American.

There are 5,000,000 or more persons in the United States who devote more or less of their time to the collection of stamps, coins, pictures, curios, etc., and the majority of them are members of the societies of collectors. Among these are: The American Society of Curio Collectors, the Philatelic Sons of America, the American Philatelic Association, the American Numismatist Association, the American Camera Club Exchange and the Illustrated or Souvenir Card Exchange. These and many other associations of collectors will hold their annual meetings in Buffalo during the week beginning August 19th, while the Pan-American is in progress.

On account of the many attractions offered by the Exposition and Niagara Falls, and the extraordinary opportunities which the collectors will have for adding to their specimens, it is expected that this will be the most largely attended meeting of the different associations ever held.

When the Pan-American Exposition opens its gates at Buffalo, May 1, 1901, twenty-five years will have elapsed since the Centennial at Philadelphia. During all this time there has been nothing noteworthy of the kind in the east, and the new century may never see anything to rival or surpass the Pan-American in magnitude, richness, beauty and universal benefit. Its location, too, is one to assure a record-breaking attendance, for taking it as a center and drawing a circle with a radius of 500 miles, over 40,000,000 people—more than half the population of the United States—would be included in the area thus circumscribed, which would, moreover, include at least seventy-five per cent. of the nation's industrial and commercial wealth. As a center of railroads and waterways Buffalo is also at the front with the tonnage of the Great Lakes pouring into its harbor, and twenty-six steel highways reaching out in every direction. In 1876, the year of the Centennial Exposition, the entire population of the United States scarcely equalled that now within the area indicated, and the same circle in diameter, with Chicago as its center, would not include over half that number. The resultant advantages, both to the Pan-American Exposition and its exhibitors and patrons, are self-evident.

A new booklet, just issued for the Exposition, tells a very charming story of its history and creation and describes the beautiful city in which the festival has been developed and brought to completion. The booklet is embellished with many illustrations, including twelve colored plates of Exposition buildings and views. These will be sent free to applicants by the Bureau of Publicity so long as the edition lasts. All the principal buildings of the Exposition have been completed for some time. The installation of exhibits began many weeks ago, and there is every reason to expect that the Exposition will have a sand-paper finish on the first of May—a remarkable achievement, indeed, considering the unfavorable weather and the history of other expositions in this regard. Some of the afterthoughts, such as State buildings, will not be done till about May 20th, which is to be Dedication Day.

Everyone who has visited the grounds of the Pan-American Exposition during the last few months has been astonished beyond expression upon beholding the magnitude and the exceptional beauty and novelty of the enterprise. It is very much larger than people generally have supposed, and it is apparent that the \$10,000,000 which is the approximate cost of the Exposition as a whole, has been expended most wisely and with the happiest results. The particular novelty that is to be noted in this Exposition is discovered in the fact that in its exterior aspect it is a radical departure from former expositions. The buildings are arranged upon a harmonious and well developed plan, producing court settings and vistas of very charming character. The use of molded staff work and decorative sculpture upon the buildings and at all salient points within the courts, the liberal employment of hydraulic and fountain features, the floral and garden effects, the exquisite colorings of buildings and architectural ornaments, and the illumination of the whole with more than 300,000 electric lamps, combine to make a picture of unsurpassed loveliness. The musical features are also of great importance and interest. The exhibit divisions are very complete and embrace the gamut of industrial, scientific and artistic activities of the people of the Western Hemisphere. The Midway, claimed to be the greatest in the world, has more than a mile of frontage. The restaurant features



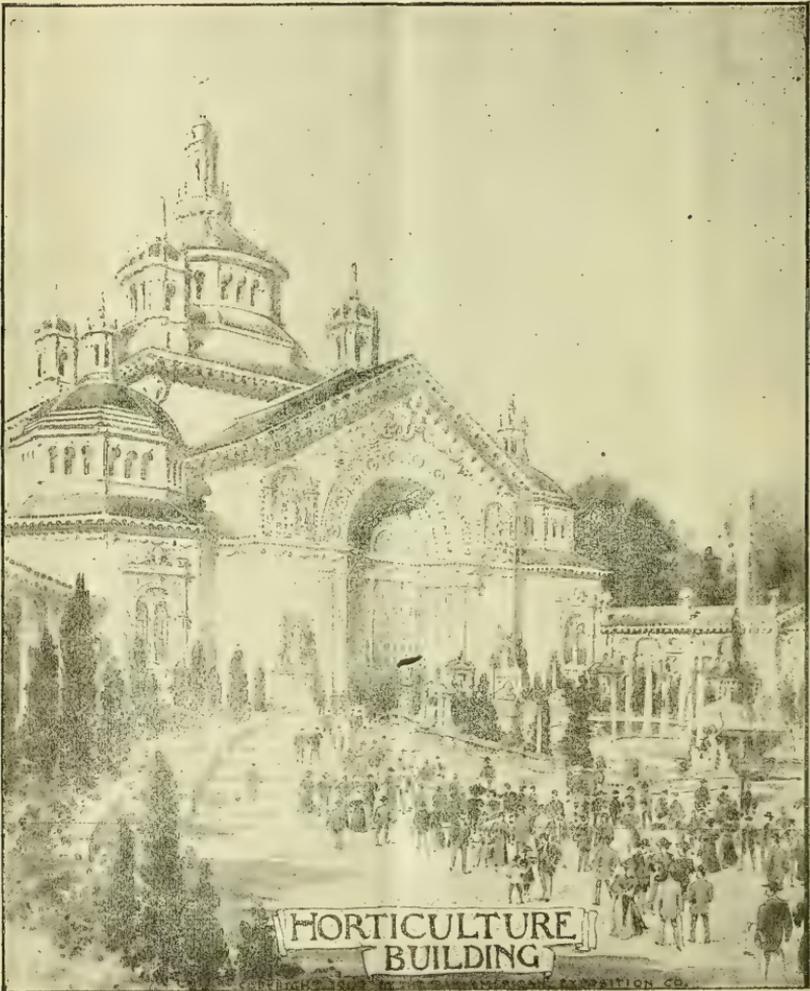
FORESTRY BUILDING
PAN-AMERICAN EXPOSITION.

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PAN-AMERICAN
EXPOSITION.

are perfect and the Exposition, so far as human ingenuity and the wise expenditure of money can accomplish such a work, is complete to the last detail.

Buffalo, too, is an ideal city for an exposition, having a summer climate that is tempered by the breezes from Lake Erie and, therefore, the most comfortable in which one may enjoy his summer outing. The people of the city have prepared themselves in a most ample way to entertain millions of guests during the Exposition. The private dwellings throughout the city have been thrown open to the public and, in view of the ample accommodations, very moderate rates will prevail

so that every visitor may have such accommodations as he is willing to pay for. He may have the palatial quarters of the fine hotels, or the quiet restfulness of a pleasant home. The average rate for accommodations near the Exposition grounds is about \$1.00 per night for lodging, with 25c to 50c added for breakfast, it being expected that guests will take their other meals upon the Exposition grounds. A number of responsible companies have organized to find accommodations for visitors at any price they may desire to pay. The officers of these companies are centrally located and this system of management promises to bring very satisfactory results to all concerned.



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The March (1901) number is one of extreme interest, containing among other things a charming article on the nesting of the Golden Eagle by R. H. Beck, illustrated with three full page plates depicting nests in various rugged situations. Mr. E. H. Skinner contributes a valuable and most interesting illustrated article on the nesting habits of Giraud's Flycatcher in its Mexican home, and other interesting papers are presented by Joseph Grinnell, A. W. Anthony, R. D. Lusk and other well known contributors. A copy of this valuable number will be sent for 20 cents in stamps.

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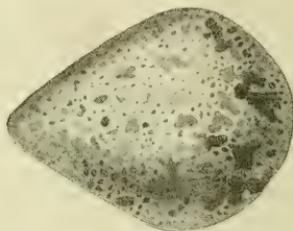
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BENJAMIN HOAG,

Stephentown, N. Y.

THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO
OOLOGY, ORNITHOLOGY AND TAXIDERMRY.

VOL. XVIII. NO. 6.

ALBION, N. Y., JUNE, 1901.

WHOLE NO. 177

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants," "Exchanges" "For Sales," inserted in this department for 25¢ per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25¢. Terms, cash with order.

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Examine the number following your name on the wrapper of this month's OÖLOGIST. It denotes when your subscription expired or will expire.

No. 177 your subscription expires with this issue

| | | | | | |
|-----|---|---|---|---|------------|
| 180 | " | " | " | " | Sept., " |
| 183 | " | " | " | " | Dec., " |
| 190 | " | " | " | " | June, 1902 |
| 195 | " | " | " | " | Dec., " |

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

IMPORTANT. This June OÖLOGIST was issued June 8th. The July issue will be printed on June 25. Copy intended for that issue must be forwarded by return mail.

NOTICE:—I will exchange 100 Datas, size $6\frac{1}{2} \times 3\frac{1}{2}$, printed on Diana Bond paper, for every 50 cts. worth of strictly first class sets with complete data sent me. Sets returned if not entirely satisfactory. CLARENCE H. LUTHER, Fayetteville, Ark., P. O. Box 322.

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[The publisher of the OOLOGIST most heartily endorses the above testimonials. **F. H. LATTIN.**]

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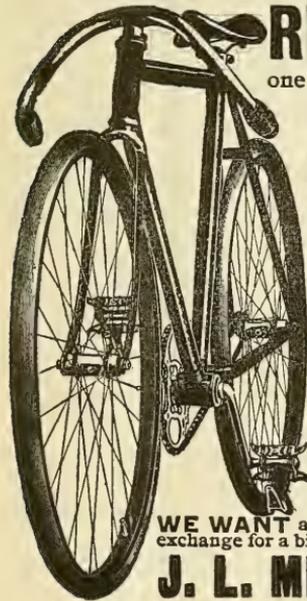
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The CURIO MONTHLY came to hand yesterday and I was much surprised at its "get up." It was more than I expected and I heartily congratulate you on your success with Vol. I, No. 1 and trust that future numbers will not lack the merits of the first issue.
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THE OÖLOGIST.

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ALBION, N. Y., JUNE, 1901.

WHOLE No. 177

THE OÖLOGIST.

A Monthly Publication Devoted to

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TAXIDERMRY.

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ALBION, N. Y.

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ENTERED AT P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

"A Handsome Little Owl."

Along the city street I wended my way to the high school building, having my eye open as usual for things ornithological and oölogical. I was passing

the quarter-block occupied from time immemorial by Martin Tighe's truck patch, an infallible guide to the precocity or tardiness of the eggging season, for when I saw Martin lining off the patch for his rows of early potatoes, I knew certainly that two handsome eggs were waiting my gathering in the nest in the big cottonwood overhanging the creek. On this particular morning a most unexpected event occurred. Now I pride myself on my acquaintance with every spot in my parish that is likely to yield any oölogical products; but there right before my eyes, in one of the ancient fenceposts, not more than three feet from the ground, was a small opening suggestive of a nest cozily ensconced in the bottom of a cavity. Strange that I had never seen that hole before. Wondering how that promising cavity had thus eluded my gaze while passing the spot four times a day for several years, I rapped smartly below the opening, while all sorts of oölogical anticipations fluttered through my mind.

Wonder of wonders! Out popped a tiny specimen of the Owl kind, a handsome little owl, which fluttered aimlessly for a moment about my head, and then perched upon the fence, scarcely beyond the length of my arm. My heart almost stopped beating in my excited bosom, for I could readily see that it was one of those little Elf Owls, or a Pygmy Owl,—ah yes, it was indeed a Pygmy Spotted Owl, no larger than a *Passer domesticus*, with beautiful white plumage mixed with longitudinal spots of grayish white. I give all these details because some collectors are so critically anxious about accurate identification.

As I peered anxiously into the cavity, which seemed much larger and rounder than I fancied would be connected with the neat circular entrance, I saw that there were eggs lying in the bottom of the hollow. Was I indeed about to secure a full set of eggs of this rare species, about which I had read with covetous eagerness in the "Manual" and which the books declared was only a casual straggler in California and Arizona? One, two,—tears almost blinded my eyes as I realized that the two, pearly white, small sub-spherical eggs were an incomplete set. Why had fate been so cruel to me, when other collectors were always getting sets of six and even seven? (I once heard of a set of eight.) What should I do? It would never do to leave this desideratum in the exposed site, with hundreds of children passing several times daily; but to take an incomplete set of so rare a species would be to depreciate their value, and would leave a train of regrets which would ungel all my future days with sadness whenever I looked over my oölogical treasures.

Something must be done, and done quickly, for a group of children are coming, and my actions would draw their attention to the very thing I wanted them not to know. While rapidly considering whether to take the incomplete set and blame fortune for the results, or to take the chances upon the nest's being overlooked by the children, even as I had overlooked it for years, keeping my eyes glued upon the immaculate treasures in the brightening cavity, I was surprised by the handsome little Owl's fluttering down and striking me plump in the small of the back,—why, 'tis nothing but the baby planting his foot abruptly against my spinal column, and I awake to find that Saturday morning has arrived, bringing a fine clear day for a tramp after products of *Bubo virginianus subarcticus*.

Well, though no little Spotted Owl, nor Elf Owl, or other desideratum so valuable, allure me afield, I'm off for a cruise to a grove five miles away. On the preceding Monday evening, while mousing around a haw thicket surrounding two large cottonwoods, I had detected an indistinct form a perch upon a low limb near the trunk of one of the cottonwoods. Though I was seventy-five rods away, as I circled the thicket there remained the same distance between the two prominences surmounting the upper corners of the crouching form, and I became aware that I was being watched with the jealous eyes of Master *B. v. subarcticus*. So starting out about Saturday noon, I made my way to the thicket. No *Bubo* was about the place. However I made a thorough search through the grove, inspecting every old nest of Crow, Hawk and even Magpie. I had not expected to find the Owls nesting there, though, for I had frequently inspected the thicket and knew about what it offered. Continuing my way I faced a cutting dash of snow pellets for nearly two miles, until I reached a grove of cottonwoods where I suspected the *Bubos* were located for their second attempt at nidification. This was on April 13th; I had spoiled the same pair of three eggs on March 16th.

Before I entered the grove, I was informed that the *Bubos* were there domiciled and astir by a small colony of Crows which inhabited the place. Sure enough, I had scarcely stepped among the bare trees when I flushed the male Owl, and sent him flapping away at the head of a dozen deriding Crows. It happened that he alighted near the female, who immediately took wing, drawing after her the parcel of Crows. The male thereafter remained upon this perch, giving utterance occasionally to a deep-voiced but subdued hooting. As the female was thus abroad, it was necessary for me to

climb to each suspected nest, not knowing the precise site; and guided by my experience with *Bubo* in Illinois, where sycamores grow tall and *Bubos* nest high, I ascended to several that were conspicuously high. At length, having examined all the likely sites, I concluded that the occupied nest must be an insignificant affair in the top of a slender tree. Pushing through the thicket to reach the tree, I discovered a large, lean-to nest against the trunk of a small tree, the distance of the structure from the ground being only ten feet. Think of that, Dr. Strode, only ten feet. Little thinking that *B. v. sub-arcticus* was living so far beneath his privilege, I scrambled up the trunk from sheer force of habit, and ah, there were two eggs, generously blotched with blood as though produced through sore affliction, lying lonesomely in a cavity ten inches across and two inches deep. Incubation advanced to blood and matter, as I wrote in the data. And thus my Owl dream partially came true.

P. M. SILLOWAY,
Lewistown, Montana.

The Turkey Vulture.

Cathartes Aura.

Throughout southern California, from the booming surf of the hoary old Pacific to the snow capped summits of the Sierras, the Turkey Vulture, or "Buz-zard" as he is commonly called, is by far the most abundant raptorial bird. Hawks, mostly of the Red-tailed and Red-billed varieties are common residents of certain limited districts but these vultures are well nigh universal, in fact, so plentiful are they that one who has lived in this Golden state for any length of time, notes their absence from landscape to a greater degree than he does their presence in it.

In spring and early summer the big dark colored fellows are found most

abundantly back in the higher hills but as soon as the young are fully fledged, they begin to scatter out over the lands where the food their manner of life demands is more easily obtainable than along the sterile hillsides. This family exodus takes place about the end of August, but the huge California Condors, who occasionally frequent the same hills with their lesser relatives, do not join in this local migration, preferring to take their chances in their native hills. These huge scavengers, however, do not nest with us, if so my knowledge on the subject is at present quite limited, as the Turkey Vulture do.

In this immediate vicinity, and, I may say, throughout the northern part of this county (Orange), their eggs may be looked for from April 1st to May 1st. Before this date sets are seldom complete and afterwards my experience has been that most eggs are "past redemption" even by such all powerful means as caustic potash. I admit, on the other hand, that full sets of the eggs of this vulture have been found near here earlier than April 1st, and on the 10th day of March of this year while out on the trail of a pair of Pacific Horned Owls, I found two fuzzy young "buz-zards" under a shelving ledge of rock on a barren hillside, and I have read of fresh sets which have been taken a few miles southeast of this place during the last ten days of May.

Notwithstanding the many floating rumors which have come to me of "buz-zards" that built huge nests in trees. I have never yet succeeded in finding the Turkey Vulture nesting anywhere save in the ground, and then always in little caves, never "among the brush on a sidehill" as I have read of other collector's doing. Nor do they nest in hollow trees, a trait common to them in Texas and other Gulf states. This is not from any lack of dead trees for every fool camper who passes through our canyons must of

necessity build his fire beneath the overhanging trunk or the spreading roots of some giant sycamore or oak, so as to leave some mark of his vandalism on a creation far beyond his infinitesimal ability to replace.

I have now in my collection several sets of this species taken in Texas, New Mexico, Arizona and other southwestern states as well as eight sets of my own collecting; further I have sets from states east of the Mississippi also, and it is worthy of note that all the western and southwestern collected eggs are much larger, more clearly shell marked and more brilliant in their outer markings than are those from the eastern states. The set represented in photo herewith averages fully .25 inch longer than the average of four sets from east of the Father of waters.

As may be seen from the illustration this is a well marked set, yet I have seen many, and taken three or four which were more strongly marked even than these. They were taken April 12, 1900, from a hole, two by three feet, in a rocky ledge on a steep sidehill. No difficulty was experienced in walking directly to the nest. In fact I have not noticed that they try to conceal their nests or to place them in inaccessible positions.

This year on April 5th I took another set from the same locality and only a few feet from the old hole, so I suppose it was from the same pair of birds. The markings persist in size and position, while the four eggs could not be separated by the calipers alone. No attempt at nest building is ever made and the nest smells worse than the Red-tails' I mentioned in the May OÖLOGIST.

I have never seen any egg which surpasses the egg of the Turkey Vulture in beauty unless perhaps it be that the Emeu, one egg of which I obtained from the Publisher of the OÖLOGIST not long ago.

HARRY H. DUNN,
Fullerton, California.

A Consideration.

In reading many of the articles in current periodicals, a question must be forced upon the minds of all true bird-lovers. By bird-lovers I do not mean to include those who simply see in birds charming objects awakening a coveting desire for personal possession, but those who recognize in these "feathered gems" fellow creatures having right to existence, and the power to enjoy same, entitled to respect and possessing traits of character worthy of earnest and forbearing study. The question which is suggested to such students is how many persons in the United States, collect birds their nests and eggs, one or all, of these how many are there whose work in this line actually adds to the sum total of human knowledge, and of those who do so add what percentage of their collecting work continues to a desirable end. In short what percentage of all such collecting throughout the country, actually yields commendable results and what percentage contributes to untold evil?

These are considerations which effect not alone the mere "collector," but also at least nine-tenths of those persons who are posing as sincere students, and perhaps conscientiously believe in the value of their work.

It is not my purpose here to enter into that much discussed question of what limits in collecting, the cause of advancement of knowledge justifies. "Who shall decide when doctors disagree?" And that they do so disagree on this subject, the columns of the publications on ornithology amply testify. It has simply occurred to me as a consideration, why should not those who are conscientious in the matter ask themselves in sincere impartial honesty, what the character of their work, their ability for it, and its results justify?

When students whose conscientiousness it would be unjust to lightly question, indulge in repeatedly collecting not first alone, but second and third layings of birds whose economic value is now becoming known throughout the realms of agriculture as well as ornithology, and birds and their nests and eggs are amassed in large series, by an ever increasingly large number throughout the country, aside from the question of consideration of the rights of these weaker fellow creatures, aside from consideration of the marked decreasing of numbers of objects of beauty and interest, adding immeasurably to the power of enjoyment of nature, and contributing a fertile subject for legitimate, harmless, and profitable study, there is furnished to the great mass of the people as just cause for complaint from an economic standpoint and not alone is the study of ornithology impaired by the loss of subjects but its cause is injured irreparably in the mind of thousands of people who hold the pleasure of daily observation of the birds as tiny friends, vastly above all the accumulated scientific knowledge of the past.

If a competent student can look at an amassed series of a hundred specimens of some species of a bird, or of a thousand eggs, and can conscientiously feel that the results to true and valuable knowledge has justified this terribly serious sacrifice, it is my belief that he is above reproach. But if he has *one such specimen* in his collection which has yielded nothing to knowledge, whose sacrifice of life has been in vain, then it appears to me that a careful consideration of the fact must give him regret, keen and sincere in proportion as his motives are honest and conscientious.

When we review the enormous number of specimens in the private collections of the country, if we were able to trace all the results they have

yielded in the way of increase of knowledge, should we find the sacrifice justified? And this does not touch the matter of the millions of specimens gone to early destruction with never a to contribute to anything, through the misguided efforts of over-zealous collectors whose ability to obtain, entirely replaced any ability to abstract facts.

It seems to me then that when one is inclined to turn to the pursuit of this study he should earnestly, thoughtfully ask himself the question what his possible ability justifies in the matter of collecting.

If such a student would discipline himself, first by an apprenticeship in observing and accumulating facts without the destroying of life and the enjoyment of it, would not many fall by the wayside, and would not the gain be vastly greater and the sacrifice greatly less? If a man has served such an apprenticeship, studying birds by means of camera, opera glasses and the many means whereby their lives are not destroyed, there has come to him opportunity for the acquirement of more facts and original knowledge than many imagine, and is not that man better fitted thereby to enter into the serious part which deals with those lives that the true bird lover will reverence second only to human life and will not lightly sacrifice to the passing desire of the moment or to a mistaken idea of need.

Finally, when a man has fully determined that he is justified in the pursuit of that high branch of the study which occasionally requires the sacrifice of life or happiness, he should use the utmost care to assure himself that his methods are such as to guard against *waste*. When one reads of men taking eggs from the nest when far advanced in incubation and then failing to save them with a weak excuse that they are gone beyond all hope he loses all patience. I have taken a set of Red-

shouldered Hawk in which the young had already pipped the shell, and blown them as fairly first class specimens, by the careful use of caustic potash and *patience*. I took a set of Scarlet Tanager in which the young had feathers formed and injecting caustic potash and occasionally shaking, the contents in three days became transparent, and save for the feathers blew out, thin, almost as water. I have also saved sets of both large and small eggs in first class condition by allowing them to stand a day or two with water in, in the absence of caustic potash.

I wish I might have an expression of opinion on this consideration from my fellow students, not a hasty, biased or prejudiced one, but the result of careful, honest consideration from all its aspects.

□ Particularly I would like to see expressed the views of those students whose work extends over sufficient time to give them the guidance of experience.

B. S. BOWDISH,
Mayaguez, Porto Rico.

May 18, 1901.

Pan-American Notes.

On and after June 1st, as time and "patients" will permit, ye Editor intends to take an occasional day off and do the Pan-American—all exhibits and portions of exhibits containing anything of special interest to the readers of the OÖLOGIST in the specimen and curio line will be carefully noted, in order that the many who visit the Exposition with a limited amount of time at their disposal, will surely see all pertaining to their favorite hobby.

For the past five years we have spent the bulk of our time in Buffalo and are fairly well acquainted with the Pan-American city and its accommodations. We have many personal friends and acquaintances, who are taking roomers and boarders during the season and in case any of the OÖLOGIST readers

intend visiting the Exposition and have no bidding place in view, we will gladly turn them over to the tender mercies of a friend. Write exactly what you want and how long you intend to stay etc.

The following regarding the wonderful exhibit of the Smithsonian Institution and the National Museum at the Pan-American Exposition, is rehashed from an interview with Dr. Frederick W. True, chief curator of the Bureau of Biology of the Smithsonian Institution and Government Commissioner of the Institution to the Pan-American:

The display is the finest ever made by the Institution and the National Museum, not excepting Chicago. While the quantity of the exhibit at the Pan-American may not exceed that of Chicago, the quality will far excel it.

It forms one of the largest exhibits in the Government Building. Every bureau of the Institution is represented, but, as is naturally to be expected, the National Museum makes the most extensive display.

The Institution has several exhibit illustrations of its history as well as some showing new developments in the work it also shows the will of James Smithson, the founder of the establishment, and copies of his scientific writings. Pictures of the chancellors and secretaries of the Institution is also shown, with views of the buildings, offices, the Hodgkins fund medals and publications, and, finally, a complete set of all the publications of the Institution and all its bureaus from the year 1846 to the present, comprising hundreds of volumes.

The National Zoological Park is represented by a large relief model showing all the natural features of the park and the animal houses, ponds, bridges and other matters of interest. This model has been worked out with great care and will show every important detail with exactness. The model will be supplemented by many interesting photographs of picturesque points in the park.

The exhibit of the National Museum consists almost entirely of new objects not shown at any previous exposition. The Pan-American idea runs through the entire exhibit, and very little that is not American will be shown. The plan has been to select large and striking objects and exhibit them singly,

rather than to show extensive series of small specimens. The exhibit is divided into three sections—zoology, geology and anthropology.

In zoology the museum has been fortunate in obtaining many rare and striking specimens for the exhibit, which is confined to American vertebrate animals. Among mammals should be mentioned the Kodiak bear of Alaska, the largest bear in the world; the singular little gray Glacier bear, which lives among the snow fields back of Mt. St. Elias; the giant moose, the wild black sheep of British Columbia, and Dall's sheep, which is entirely white; the rare West Indian seal, the musk ox, the mountain caribou, and others. All the larger species are mounted on bases with accessories indicating their natural surroundings and habits.

The bird exhibit comprises about 300 of the most brilliant and striking forms in America, including many West Indian and South American species, such as the condor, the American ostrich, the macaws and parrots, umbrella bird, bell bird, cock-of-the-rock. The taxidermy of both birds and mammals is of a very high order.

Among reptiles the most striking exhibit is a gigantic snapping turtle from Texas, known as the alligator snapper. The creature is about five feet long, and is the largest fresh water turtle ever found in America. This part of the exhibit also includes the poisonous and non-poisonous American snakes—rattlesnakes, moccasins, boa constrictor, spreading adder, together with many striking lizards, frogs, toads, and salamanders, including species from Cuba and Porto Rico.

American fishes are fully represented. The museum has had agents at Key West, Florida, and on the Amazon River collecting specimens specially for the Buffalo exhibit. These have been prepared by a new method, by which their natural form and much of their brilliant color is preserved. A novelty in fishes is a large model of luminous deep-sea fish, arranged by means of electrical attachments so that it will phosphoresce, as it is known to do, when alive in the depths of the ocean. Many of the fishes from the deepest waters are exceedingly grotesque and wonderful in structure, but on account of their small size and their bad condition when dragged from the depths of the sea, they are little known to the public.

The geological exhibits are diversified and chiefly American. One very interesting series consists of examples of the various elements which occur uncombined in the rocks, such as gold, silver, copper, lead, mercury, platinum, carbon and iron. Strange as it may seem, one of the rarest of these elements is iron. The exhibit contains native iron from Greenland, and a portion of an iron meteorite from New Mexico. Another interesting object is a large platinum nugget worth about \$200. Carbon is represented by a diamond crystal, a piece of graphite, and specimens of the curious and valuable black diamond known as carbonade, a piece of which the size of half a pea is worth about \$40.

A series of minerals includes every important variety, and no small number of very striking forms, largely from America.

Another especially interesting exhibit at this time is a series of the rocks of the Hawaiian islands, which, as is well known, are namely lavas. The exhibit is accompanied by photographs of the interior of the craters of the volcanoes. An exhibit of concretionary structures found in mineral and rocks will include some magnificent slabs of the concretionary granite found in New England. Collections of deposits from the geysers and hot springs of Yellowstone Park are also shown.

Still another section of the geological exhibits is devoted to fossil vertebrate animals and fossil wood. Of the fossil animals, the one which will doubtless attract most attention is the skeleton of the gigantic mammal-like reptile known as Triceratops. This creature was larger than the largest elephant, and had an immense bony shield on the back of the head, as well as a pair of great horns over the eyes. Besides the skeleton, a large painting representing the animal as it must have appeared when alive, and a model is also shown.

Another extraordinary creature exhibited is a bird with teeth, known as Hesperornis. This remarkable bird was more than three feet high. The skeleton is practically complete. Much attention will doubtless be attracted by the collection of fossil woods from Arizona, many of which are extremely brilliant in color.

Hardly less striking is the Zeuglodon, a whale-like carnivorous animal from Alabama, which reaches a length of 50



U. S. GOVERNMENT BUILDING.

or 60 feet. It is a strange combination of whale, sea-cow and sea-lion, and has long been a puzzle to zoologists.

An extensive display of American anthropology, prepared in co-operation with the Bureau of American Ethnology, completes the exhibits from the museum. The most prominent feature of this exhibit is large family groups, representing typical native American peoples, from the Patagonian to the Arctic Eskimo. Each group will serve to give an idea of the costumes, surroundings and mode of life of the people to which it relates. Close attention has been paid to every detail of the accessories and the modeling and painting of the human figures are of a high order.

The principal peoples represented are the Eskimo of the farthest north, the Canadian Algonquins, the Thlinkins of Southeastern Alaska, the basket-making digger Indians of California, the Zuni Pueblo Indians of Mexico, the Mayas of Yucatan, the Napo Indians of the Upper Amazon, and the Rhea-hunting Indians of Patagonia.

Surrounding the groups are many cases filled with collections representing the arts of the Indians, their household utensils, dress, weapons, etc. A series of models of habitation, the wigwam, the snow-house and pueblo is also shown.

The public will doubtless find a great deal to interest them in the collection of native baskets, which are shown. This series includes every type of aboriginal basket-making in the western hemisphere. There is many beautiful pieces, such as the Aleutian fine grass weaving, the pomoc-coiled ware of California, and the diagonal weaving of the caribs of Guiana, the first Indians met by Columbus.

With the object in view of presenting a route of wholesome fun and instruction, some of the greater enterprises and chief Midway attractions at the Pan-American Exposition, have gone together in an organization called the Red Star Route, guaranteeing absolutely their entire offerings as wholesome and free from all objectionable features.

Naturally, the first visit will be made to the electric reproduction of the Burning Mountain of the Sandwich Isles—the Volcano of Kilauea, because of its nearness to the main entrance to the Midway. The spectator stands within an extinct crater of this perpetual fire mountain of Hawaii.

Next to the Volcano you visit the greater Hawaiian Village, where you will find the now world renowned Native Band of Hawaii, whose music, especially the Hawaiian national airs, are delightful, and the famous Huluhulu dancing girls.

From all this fun, next, for the sake of patriotism, visit the great electric cyclorama, the Battle of Mission Ridge, an enormous reproduction of the great battle. Its management earnestly begs that the G. A. R. will make their commodious waiting rooms their general headquarters.

Moving along the vast Midway you are sure to be attracted by the quaint music of the Filipino Band. The Filipino Village is a big colony and contains representatives from nearly all the races inhabiting the islands. They range from cannibalism to the highest degree of civilization. Many of the women are extremely beautiful.

Near the Administration building you will find a handsome brick Venetian edifice, which contains the greatest wonder of all the Exposition—the Infant Incubators, from the London and Berlin Institutes, which has for its object the saving of the lives of poor little unfortunate babies who happen to have been prematurely born.

On the Midway, and immediately opposite the great Horticultural building, you will find the Herodian Palace, containing the sacred spectatorium, Jerusalem and the Crucifixion of Christ. Softly you tread with reverential step the grand staircase and look over the great scene. It is all sublimely realistic, and the most holy feelings of which the human heart is capable are aroused. This great work covers an area of canvas four hundred feet round by sixty feet high.

The price to each of these leading Midway attractions has been uniformly fixed at 25 cents.

Although ground was first broken for the Pan-American Exposition on the 25th day of September, 1899, it was not until June 4th of last year that the first timber was raised aloft as the beginning of the superstructure of the first building. Since that day a beautiful city of more than one hundred buildings has sprung into existence. The magic of 20th Century methods has wrought a wondrous work in the construction of this beautiful and costly Exposition, which on Wednesday, May

1, was formally opened for a six months' festival.

The completed exposition is a distinct triumph for every one concerned in the mammoth enterprise. It may be said to the credit of Buffalo that her citizens have furnished the money for it, receiving no Government aid. The entire amount appropriated by the Federal Government for the Exposition has been expended under the direction of the Government Board of Federal exhibits exclusively. The New York State appropriation has also been expended under the same conditions. The total cost of the Exposition, including the Government and State appropriations, the cost of the Midway and other buildings, is conservatively estimated at \$10,000,000. The Exposition was first proposed by a number of citizens at the Cotton States Exposition at Atlanta, in 1895. Its official history, however, began in June, 1897, when a company for its development was organized by several prominent citizens and received the approval of the City, State and National governments. It was at first intended to hold the Exposition in 1899, but the Spanish-American War caused its postponement to the present year. The preliminary organization was superseded by a larger one with ample capital for the Exposition, and from the time of the reorganization the work has moved forward rapidly. This organization consisted of 25 directors, with the Hon. John G. Milburn as president, Edward Fleming secretary, George L. Williams, treasurer, and John N. Scat herd as chairman of the Executive Committee.

The Hon. William I. Buchanan, at that time United States Minister to the Argentine Republic, was unanimously elected director-general, November 1, 1899. He had previously been the director of Agriculture, Live Stock and Forestry at the World's Columbian Exposition at Chicago. His ability as an organizer and director of a great enterprise was at once manifest, as the work of the Exposition has gone forward without apparent friction or delay. The original plan called for some twenty large exhibit buildings and to these many more have been added. The Exposition plot consists of 350 acres in the northern part of the city, accessible from every direction by electric cars, and having as favorable a steam railway service as could possibly have been chosen. The general archi-

ture of the Exposition follows the Spanish Renaissance. The plan was worked out by a board of eight leading architects, representing several of the leading cities of the country.

The most comprehensive view of the Exposition is, perhaps, obtained from the Esplanade from a point a few rods north of the Triumphal Causeway. Here the visitor, with one sweep of the eye, may see nearly all of the principal buildings of the Exposition. The Triumphal Causeway, behind him, is a magnificent structure, designed by John M. Carrere, chairman of the Board of Architects. Four tall pylons are connected by swinging cables. The pylons are surmounted by four standard bearers, designed by Karl Bitter, the director of sculpture. The bridge, as a whole, is intended to express the pride of the American people in their achievements. The standard bearer represents a muscular youth upon a rearing horse. Below him are the trophies indicative of feudalism, slavery and tyrannical power, the whole expressing the triumphal struggle of the people of the Americas to free themselves from the institutions of despotic ages and governments. Terminating the buttresses of the piers are four groups of trophies typifying Peace and Power, modeled by Augustus Luke-man. In the niches on the side of the bridge are statues symbolical of Hospitality, Love of Truth, Patriotism, etc. On each side of the bridge are fountains of rearing horses and figures clustered about tall poles which carry huge silken flags. The fountain on the east typifies the Atlantic Ocean and that on the west the Pacific Ocean, with one base uniting the two. The sculptor of these is Philip Martiny. Beneath the bridge are subterranean grottos modeled after the famous Buttes de Chaumont.

Turning now to the eastern wing of the Esplanade the observer will note the group of three great government buildings, the open space being embellished with sunken gardens, fountains and statuary. At the left, marking the western boundary of the Esplanade, are the Horticulture, Mines and Graphic Arts buildings, this court being, also, decorated with statuary, fountains and flowers. Looking due north, the majestic Electric Tower rises to a height of 400 feet. This tower stands at the north end of the Court of Fountains and constitutes a very beautiful center-

piece. On the eastern side of the Court of Fountains are the Ethnology, Manufactures and Liberal Arts and Agriculture buildings. On the west side are the Temple of Music, Machinery and Transportation and Electricity buildings. Beyond the tower is the Plaza whose northern boundary is marked by the Propylaea, a very beautiful architectural screen, rich in color decorations and ornamentation of staturary. East of the Plaza is the great Stadium, a mammoth building, having a seating capacity for about 12,000 people. West of the Plaza is the entrance to the Midway, where one may spend days enjoying the multitude of novel entertainments.

The beauty of the picture is beyond the power of anyone adequately to describe, for no words can convey to the mind the glorious result of the combined efforts of the architects, the sculptor, the landscape gardener, the colorist and the electrician. They have all worked harmoniously to produce a set picture upon such a magnificent scale as to dazzle and delight every beholder.

Upon the pinnacle of the tower stands a graceful figure in gold called the Goddess of Light, presiding over the Exposition and looking abroad over its many beautiful features. In her upraised right hand she carries a torch while with her left she points to the beautiful scene below. The face of the tower is covered with myriads of electric lights. One does not realize its mammoth proportions until he looks at it from a near point of view. The main body of the tower is 50 feet square; with two wings, each 110 feet high extending from the east and southward and enclosing a semi-circular court. From its southern face gushes a cascade, at a height of 70 feet. At a height of 110 feet is a fine restaurant. Elevators will carry visitors to various heights in the tower.

The State and Foreign buildings are situated in the southwest part of the grounds. Nearly all the governments of the Western Hemisphere are represented, either in buildings of their own, or have creditable exhibits in the various exhibit divisions. Several of the States have very fine buildings of their own and all of the important states are represented by special exhibits in the Agriculture, Mines and other buildings. The Live Stock division occupies seventeen pavillions, covering about 10 acres of land. A special building has

been erected for a model dairy and a commodious building is used for dairy exhibits. The division of agricultural machinery occupies extensive exhibit space beneath the seats of the Stadium. Two special buildings have been erected in the southeast part of the grounds for a commercial ordinance exhibit. Between the two buildings is a model of a Gruson turret, 52 feet in diameter. This is so arranged that the visitor may go inside and note the construction of this form of sea-coast defense fortification. The exhibit of big guns by the United States Government is one of the very interesting features of the Exposition.

The arrangement of the various Exposition buildings is such that one may save a great deal of time, as well as effort, in seeing the exhibits. The arrangement is very compact and one may go from building to building and enjoy himself thoroughly as he goes.

The Fine Arts building is about 1,000 feet south of the Government buildings and contains a fine collection of the best works of American artists. The forestry building is a near neighbor of the Government Building, and a few rods to the east is a stockade of the Six Nations of Indians whose ancestors dominated the territory of New York 400 years ago. This stockade contains all the various forms of buildings to be seen in an Indian Village prior to the settlement of New York. One of the pleasure trips within the Exposition grounds is the circumnavigation of the buildings upon a broad canal by means of launches which stop at convenient points. This canal, over a mile long, surrounds the main group of Exposition buildings. There are also wheeled chairs in abundance, having noiseless rubber tires and easy springs, so that one may be as lazy and comfortable as he desires. A miniature railway also skirts the Exposition fence and will be found convenient by many.

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Kalamazoo, Mich.

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A MONTHLY PUBLICATION DEVOTED TO
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ALBION, N. Y., JULY, 1901.

WHOLE NO. 178

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WANTED.—A cabinet for bird skins and back numbers of magazines. Can offer sets, skins, mounted birds, shells etc. or part cash, also have a Lady's Bicycle, 28 in., for sale at \$18.00 cash. All answered. W. JENNINGS WIRT, Gaines, Orleans Co., N. Y.

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WANTED.—Sets of N. Am. Birds Eggs. Can use any except 498, 187, 49, 385. The more desirable the sets you offer are, the better the offer I will make you for them. I can offer Trays for Eggs, Large Egg Calipers (best 12 in. sliding); Glass top Egg Cases, Rare Single Eggs, Emue Eggs, Collection of 300 var. good Postage Stamps in sets; Shells, a large assortment labelled; Minerals, single specimens or collections; Fossils; Indian Arrowpoints; Spearheads and Knives, many localities; also an 8½ in. Rough Stone Axe and a few Drills; a few Bird Skins and Corals. Write, sending list of what you can spare and giving me an idea of what you want and I will make the best offer I can. E. H. SHORT, Box 173, Rochester, N. Y. 179

WANTED.—Sets of eggs containing abnormal specimens, such as runts, albinos, monstrosities, abnormally colored or shaped eggs. Will give cash or good exchange. J. WARREN JACOBS, Waynesburg, Pa. 101

WANTED.—May number, 1888, Vol. XXII, American Naturalist. WILLIAM BREWSTER, Cambridge, Mass.

FOR SALE.—Fancy and common Geodes, ranging in price from 25c. to \$5.00; halves from 10c to 50c. Special rates to colleges and museums. H. K. MCLELLAN, Hamilton, Hancock Co., Illinois. 179

OÖLOGISTS WANTED.—Will pay 50cts. each cash for one of each June 1888, and April 1889, and will give an exchange notice, or coupon good for one, for copies of the January 1895 and April 1899 issue, a notice for each copy. FRANK H. LATTIN, Albion, N. Y.

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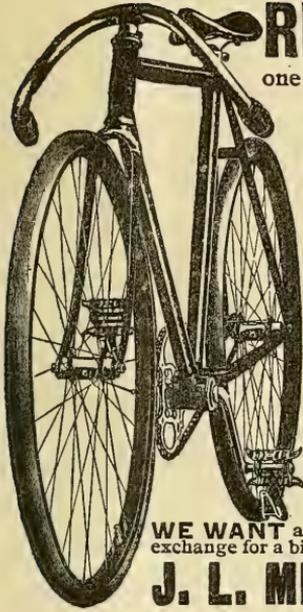


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How Some Birds Capture Their Prey.

The manner in which the different species of birds capture their prey is very interesting to the observer. There are divers, snappers borers, grubbers, scoopers, skimmers, diggers and many

others of devious ways. In swimming and flying most of the birds give evidence of their habits of securing their prey, as seen in the methods of the Flycatchers and in the movements of the Ducks in the water. But the habits of nest construction are often quite dissimilar from the methods of food capture. We know that the Woodpeckers can bore for food and at the same time hollow out their nest, but the Kingfisher uses its beak in securing its prey in the water, and yet burrows in the sand when forming its home, while the Woodcock, which bores for its food, builds its nest on the surface of the ground. The Bank Swallow captures its prey in the air, but burrows in the bank like the Kingfisher. The Great Blue Heron spears or snaps up its prey in the water and yet it builds its nest of sticks quite similar to the ways of many small birds. There are no groups of birds which have no marked variations in some habits and it is interesting to note them in comparison.

Loons, Mergansers, Auks, Guillemots and many other birds secure their prey by diving, and many can and do remain a long time beneath the surface and make long flights, so to speak, through the water in pursuit of fishes. I have twice seen birds swimming under the water and they seemed to be flying. In capturing their prey they undoubtedly use their wings in a similar manner. There is small chance of our seeing the actual capture by these diving birds, but we may reason that they secure the minnows by a movement similar to that of the Heron in his wading and snapping.

Let us compare the ways of a few birds in securing prey from the water, on the surface or near it. The Osprey

poises above the selected prey and at a height of from fifteen to 100 yards, generally at about thirty yards, and then plunges at an angle of from forty to eighty degrees. He drops with a mighty rush, and apparently, is certain of destruction if he strikes the water at this speed. No one can positively assert just how the Fish Hawk strikes the water, for though it seems as if he strikes heavily, and very often goes completely under the surface, and in some cases remains under for nearly a half minute, yet it is observable that the prey, when secured, is always brought forth in the talons. It is really remarkable how the Osprey can regulate his plunge and secure the fish with his claws after churning the water to foam. It would almost seem that he makes a grab in the dark after reaching the water. His method of capture differs from all others of the birds which I have observed in America. When the Osprey secures the fish it quickly mounts from the surface and then the capture may be plainly seen in the talons of the fortunate bird. The bird nearly or quite always carries the fish head forward and grasps it with both feet. In quarters where I have observed I believe the average catch weighed about a pound and a half and I judged that fish that weighed less than a pound were rarely hunted, while two pounders and even as large as three pounders were not rarely secured by the Hawk. On one trip in Southern Florida we repeatedly observed a fishing bird that had received an injury to one of its legs, rendering it powerless to use the injured foot. This foot hung down when the bird flew and was of no apparent use in its forays for fish. We carefully watched this crippled fisher in its attempts to catch fish, and noted that the poor bird made as many as eight or ten plunges before securing a prize, and when the fish was secured the prize was held in the claws of one foot, the other foot be-

ing of no assistance. After the capture the Hawk flew to a convenient perch on a limb in plain sight from our boat and attempted to eat the fish. The attempt to manage the fish and as well hold to its perch was too much of an undertaking for the disabled bird and in its struggles it lost its hold on the fish, which fell to the ground. The Hawk made no attempt to regain the captured fish, but immediately began fishing again.

The Pelicans are odd feeders and their methods of securing prey are various. In addition to the habit of snapping up fish and other food as they swim about, they have also the habit of swooping down and engulfing fish on the surface or just below. This habit frequently observed in the Brown Pelican in the south is most singular. The fishing birds may be closely watched at St. Petersburg on Tampa bay, where they are protected by law, and where they have become very tame and unsuspecting. I have repeatedly seen the birds dive within ten yards of the wharf where I was standing. The bird flies with flops of its huge wings and has not inaptly been likened to an exaggerated Woodcock with its long beak drooping. At times the birds hover over a spot and then drop with a heavy thud into the water. This plunge is made head first and it always seems a miracle to me that the creature is not killed outright from the concussion. The bird seems to strike the water like a huge bladder and sometimes goes completely beneath the surface, but generally only partially, and in most instances immediately rises after its plunge. In these cases where the prey is small and taken from near the surface, I am well satisfied that the Pelican scoops up the food rather than snaps it up with its beak. If one will examine a Pelican's bill it will be found that the upper mandible is firm and very strong, while the under mandible is of very pliable material,

and though but an inch wide when resting, may easily be spread to four or five inches. It is my idea that the bird when fishing for small prey on the surface, and by plunging, merely opens its bill as it strikes the water and scoops up the minnows in its pouch. I have frequently seen the Pelicans feeding so near me that I could distinguish the small fish jumping about in the pouch of its captor just after the bird arose from its plunge. An observer is enabled to do this when the bird flies between the wharf and the rising or setting sun, as the pouch is almost translucent and the jumping form of the little fish may be easily distinguished. Of course when larger fishes are caught the principle of capture is different. I have seen two pound mullet taken from a Pelican's gullet and have been told by a reliable man that he had seen one of a weight of over three pounds removed from a fishing Pelican.

The Gulls and Terns feed almost entirely from the surface and are graceful in all their movements, dropping to the water in bold plunges and skimming above the surface like the wind-driven foam. The Petrels and Skimmers course over the sea, tacking and veering in their search for food. These birds snap up their prey when on the wing as with nearly all the sea birds. The Geese rarely go beneath the surface while feeding, and I have never seen a Swan more than plunge its head and neck under water. Geese and Swans always feed where the water is shallow when on lake or stream, while the sea Ducks feed from deep water. I have no doubt that many species of Ducks feed from the bottom where the water is twenty or more feet deep, and I have found some feeding on fresh water that had the crops filled with crustaceans and aquatic seeds, which were only to be found at the bottom and in fifteen feet of water. The Mergansers, which come very near to being exclusively fish feeders, secure

their prey as do the Loons, by pursuit and snapping up the fish. This habit is followed at times by nearly all species of Ducks, and well known river Ducks not rarely partake of a feast of small minnows when they can be found in shallow water and are not difficult to secure.

The Herons feed largely upon fish, but they vary their diet and are even known to eat grasshoppers, while they are very destructive to the larval forms of the dragon fly and other aquatic insects. This is especially true of the Least Bittern and Green Heron, which are very beneficial to man in their choice of food, though they are also destructive to the small fry, especially the Fly-up-the-creek or Green Heron, a great poacher on the trout fry. I have watched the Herons and Bitterns as they waded about and have seen the lightning like thrusts of their beaks as they stabbed at their prey. Among the fishes that are preyed upon by the Heron family is the bullhead or horn-pout, which is known to have three erectile fin spines—one on the dorsal fin and one on each side. The wild birds are generally well aware of the danger in swallowing one of these dangerous fishes, whole, and they usually destroy the hinge that works the set-trigger spine before swallowing the fish whole. I once had the pleasure of watching a Greater Bittern dissecting out the dangerous dorsal and pectoral fin spines from a good sized bullhead, preparatory to making a meal of him. The scene occurred on the edge of a marsh and the thunder-pumper was so much engaged, that it failed to note my presence and I had a good opportunity to observe the operation. The bird placed the captured fish on the marsh grass between its feet and with sharp stabs destroyed the attachments of the spines. The work took some time as the fins of the cat-fishes are strongly connected with the bony frame-work. The bird was flushed

before completing its work and I viewed the result after the disappointed stake-driver had departed. Two of the spines were found almost wholly torn loose and the other about in shape for the feast. This bird had evidently reasoned the matter out to its satisfaction and thus avoided being impaled by the deadly spines. But this was not the case with a mature Great Blue Heron, who had captured a pound and a half catfish in a lagoon. The bird had attempted to swallow the live fish without destroying its set-trigger spines. Result—the Heron was found lying in the shallow water with several inches of the body and tail of its destroyer sticking from its bill; the body of the captured fish being started down the captor's gullet, but held there by the dorsal spine, which had penetrated the throat just back of the greedy bird's bill, and in such a situation that neither fish nor bird could relieve itself, and both were dead; truly, an unforeseen tragedy of the wilds. The small bullhead sometimes works its spine-impaling act on fish-eating water snakes, as well as on the birds.

The Rails are interesting feeders and it is a pleasure to see the trim fellows patter through the marsh grass and rushes. They feed on seeds, small molluscs and crustaceans, as well as nymphs and even the smaller minnows. Their movements are active and sinuous on the bogs and grass while the larger members of the family—as the Gallinules and Coots—swim ungracefully and gather food much after the manner of the river Ducks.

Of all the pleasing birds while feeding, the active shore birds are the most engaging. If my readers know of a sequestered lake where these sprightly creatures congregate after the nesting season, then I would suggest that an afternoon be taken in August to observe the Sandpipers and Plovers, as they gyrate about the lake or patter about and

feed upon the sands. There is but slight variation in the manner of securing the food. Nearly all of the smaller waders follow the same methods in feeding, and whether upon the shore, as the Sandpipers and Tattlers, or among the Plovers of the fields—as the Killdeer, Golden Plover or Upland Plover—they all run about actively and pick up their food in the daintiest manner. Along shore the Sandpipers may be seen traversing the sands or even wading in the shallow water and gleaning their small shelly food. I have seen the Greater Teltale, Lesser Yellow-legs and Semi-palmated Plover catching and eating minute minnows at the edge of the lake. The Spotted Sandpiper, which I have watched with great interest for over thirty years, is a loveable little creature. It feeds upon minute animal life and has a wide range in its diet, and searches for molluscs, worms and insects among the debris of the edges of the millpond and on the low land surrounding ponds and lakes.

Among the Scratchers we find but slight variation in food, and while the Grouse, Quail and Turkey feed mainly upon seeds, still they all partake of an insect diet in the summer months. The Wild Pigeon and Mourning Dove are among the most exclusively vegetable feeders. All of the Scratchers are well known from their counterparts of the yard and farm. The Wild Pigeon often feeds on acorns, both spring and fall, and unlike the Red-head Woodpecker, Blue Jay and Grackle, it swallows the acorns whole, filling its crop to repletion and giving its front a peculiar appearance. I have shot Pigeons in the woods and found them stuffed with acorns, and again with beech nuts. The Ruffed Grouse is occasionally in the habit of eating strong-scented buds, which give a balsamic taint to the flesh, which is anything but agreeable. The Spruce or Canada Grouse is rarely good for the table on account of this habit, and at

times others of our game birds are ruined for the table from the same cause. The eating of wild celery by the Canvas-backed Duck is said to greatly add to its excellence as a table delicacy.

Among the rapacious birds there is a greater variation in food and the manner of securing it than would be supposed. All excepting the Vultures seize their prey with the talons, but while the Buzzard Hawks are slow in securing the live creature, the true Hawks, Falcons and Harriers are like lightning in their movements. The Red-tailed and Red-shouldered Hawks are quite content with striped snakes, toads and frogs; while an occasional common striped gopher or chipmunk is added to their bill of fare, and these birds are but seldom found to molest the chickens of the barnyard. It is the Cooper Hawk and its near relative the Sharp-shinned Hawk, who claim most of the chicks from the coop or garden. These depredators will seize a chick or half-grown fowl as quick as a flash and sail away with it before a Buzzard Hawk could make up its mind to an attack. The Buzzard Hawks are not averse to insects at times and scarcely anything in the nature of animal food is refused by them; but then most all of the rapacious birds will vary their diet with a cheaper quality of food. I have seen that bird of elegant appearance in the air—the Swallow-tailed Kite—sweep down and secure a snake and bear it aloft, trailing it through the air as it swept the heavens in graceful evolutions. According to my appreciation there is no bird in the air quite equal to the Swallow-tailed Kite. Such dashes and plunges and unexpected gyrations as they make. While the common Hawks are silently soaring or plodding through the forests the Kites are seen to perform all the evolutions known to the bird world.

The Sparrow Hawk catches small birds with great dexterity, but compen-

sates for this lapse in decency in a measure by gathering in many of the pestiferous rodents that infest the wood and field. In the summer when the grasshoppers are plentiful, this little Hawk destroys an amazing number of these insects. It is interesting to watch a Sparrow Hawk catching hoppers. He will sit on a dead branch and fly about, first to one side and then to another, much after the manner of a Flycatcher; and he is almost as accurate in his work. I once observed a Sparrow Hawk catch a grasshopper on the wing, but the work is mostly done on the ground, and the bird always returns to his perch before eating his capture.

The little Blue-winged hawk or Sharpshin is a veritable friend among the small birds. There is no limit to his destructive inclinations and I only forgive him when he moves into the city in November and December and wages war on the imported Sparrows.

The Owls are flesh feeders and not particular as to choice, as they will eat most anything dead or alive, but will become very hungry before they will eat tainted meat, as I have proven many times with my pet Owls. This is not anything like the habit of the Bald Eagle, the emblem of our country, which often feeds on putrid flesh, and I really believe prefers stale fish to fresh. One Owl that I had as a pet for a long time would eat all fresh meat that I handed him, whether steak, mouse, snake or any small bird. His habit of eating was always the same, and he invariably held the object in his claws and tore it with

MORRIS GIBBS, M. D.

(To be Continued.)

Wisconsin Hash.

What has become of our House Wrens, or in fact any of our Wrens? I have not seen a Wren of any variety this season, in town or out of town. All

of my Wren houses are vacant, except, perhaps, tenanted by a few spiders, etc.

The Evening Grosbeaks came this year January 29th, a warm cloudy day, some soft snow; at first a flock of a few individuals, later large flocks, sometimes nearly a hundred. They stayed with us until May 2d, when I saw a female, the last one seen; the main part of the flock left about the middle of April; two pair stayed around in the evergreens in our yard so close and acted like breeding birds so much, that I actually was foolish enough to climb an evergreen in the vain hope of finding a nest; but then, the fools aren't all dead yet.

The beautiful, or I rather say the dear little Bobwhite, are getting bred in hereabouts again quite plenty, owing to a protecting law of five years, and either two or five years longer. (Am not certain.) I call my dog by a short, sharp, quick whistle; one day he flushed a pair of Bobs. Later one called and I answered; we answered back and forth several times. The dog would look at me, then toward where the Quail was, then at me, etc., prick up his ears and could not make out who the other fellow was calling him.

One day while my dog and I were out I found a Pinnanted Grouse's nest, bird on. I watched her some time and as she did not offer to leave, I sat down by the nest and after a little manouvers she allowed me to stroke and pet her to my hearts content, and to count her eggs, a fine set of sixteen.

Any one wishing to secure, perhaps, one hundred fine colored photographs, size $10\frac{1}{2} \times 14$, of Audubon's Birds of America, taken direct from Audubon plates, can do so by buying the Sunday Chicago Record-Herald, 5 cents. The pictures come to your news dealer not folded, or in other words, flat, and if you stand in with your newsdealers you can have him save out yours before his delivery boys fold them; one plate

comes every Sunday as a supplement. The series began June 16th. I do not intend this in any way for an advertisement of the Chicago paper, but as a help to my brother naturalists, whom it may concern.

A good way to trap English Sparrows is to place a large cage, with a small open door, on the ground near chicken coops, putting some feed inside.

Any one having a singer Canary should never feed it lettuce; and if in the habit of feeding it lettuce, should stop off gradually.

How many species of birds, besides the Rose-breasted Grosbeak, eat the potatoe beetle? I made a statement several years ago in the OÖLOGIST that I wish to correct, that the Cedar Waxwing eats the potatoe beetle. It should have been Rose-breasted Grosbeak, a female.

GEO. W. VOSBURGH,
Co.umbus, Wis.

Notes On Two Birds of South Jersey.

FISH CROW—This little relative to the American Crow can only be identified from its larger relation at a close range. They inhabit the trends of the coast and bay, and do not go far from brackish water.

As nesting sites, they prefer a more or less wooded island marsh to the dense woods that set farther back. Their nests are as bulky as the American Crow, but the depression where the eggs are laid is much smaller. The height ranges from ten to forty feet at times in the top of a small gum or cedar tree, while at others against the trunk of a large tree.

Complete sets may be taken with three to five eggs between the first and latter part of May. I have never collected a full set in April yet. The young of the American Crow are most always ready to leave the nest when the Fish Crow completes her set.

Of course the eggs look like other Crow's eggs, but much smaller, and at times a small American Crow and a large Fish Crow will look just alike, and measurement alone will not identify them.

The last egg laid is sometimes beautifully marked.

AMERICAN OSPREY—This well known bird is fast decreasing in South Jersey, especially around the brackish waters. I see no accountable cause for this, excepting every year several old dead limbs break off with the nests.

Every set a collector gets of this bird he well earns. First, he generally has a hard tree to climb, then a dead limb to go out on, and when that point is reached he strains every nerve to reach over the nests, which are sometimes five feet high. About that time out comes a farmer and cries out, 'come down out of that tree and leave them Hawks alone.'

I have never known the old birds to strike, but they have come very near my head.

They lay from two to four eggs. Three is the usual number and four I consider very rare. I have collected eggs for eleven years and have only found three sets with four. A series of these eggs are the prettiest specimens in a collector's cabinet. I can say right here that I never saw the eggs in the same set of like appearance. One egg I have in my collection is nearly unspotted with a cream ground.

WM. B. CRISPEN,
Salem, N. J.

New Books.

MR. CHUPES AND MISS JENNY. The Life Story of Two Robins. By Effie Bignell, The Baker & Taylor Co., 250p., 12mo., cloth, illustrated, 8 full page photo engraving plates, \$1.00.

The captive history of two robins who became at first the involuntary com-

panions of human kind. Later love and sympathy made them unwilling to take the freedom opened to them. The story is so fascinating and shows such keen sympathy with bird life that the reader can scarcely believe the incidents true. Yet this is a true robin history, and in its robin character and temperament are clearly shown.

"No sweeter, more sympathetic story of animal life has ever been written than that which is contained in this little book. Rudyard Kipling and Seton-Thompson have opened up for us a new literature, in which animals play the principal parts. This little story of Mrs. Bignell's is a worthy companion of the masterpieces of these famous authors."—*Dr. David Murray.*

TAXIDERMY. Comprising the Skinning, Stuffing and Mounting of Birds, Mammals and Fish. Paul N. Hasluck, Cassell & Company, New York and London, 16mo., cloth, illustrated with 108 fig., 40c.

In these 160 pages is included clear and succinct directions in the art of preparing and preserving the skins of birds, mammals and fish, and of stuffing and mounting them so as to impart to them as close a resemblance to living forms as possible. There are also brief instructions on preserving and stuffing insects, a chapter on polishing and mounting horns, and another chapter on preserving insects and birds' eggs. A large amount of valuable information is contained in this small volume and over 100 illustrations give additional clearness. It contains the largest amount of taxidermal information ever published.

WITH THE WILD FLOWERS. From Pussy-willow to Thistle-down. A rural chronicle of our flower friends and foes, describing them under their familiar English names. *New and revised edition* By Maud Going (E. M. Hardinge), The Baker and Taylor Company, New York, 16mo., cloth, 14x271p., 58 pages of illustrations, \$1.00.

A delightful volume giving flower facts, rather than mere names and classifications. It is written by a true

lover of nature, who adds to exceptional literary feeling the rare gift of making instruction thoroughly enjoyable by a style at once clear, entertaining and imaginative. The book carries us through the whole season with the flowers as they make their appearance. It

is accurate in its illustrations and text to the point of scientific precision, and its style and method (which discriminate it widely from the ordinary "botany") enhance, through their intrinsic attractiveness, its power to instruct.

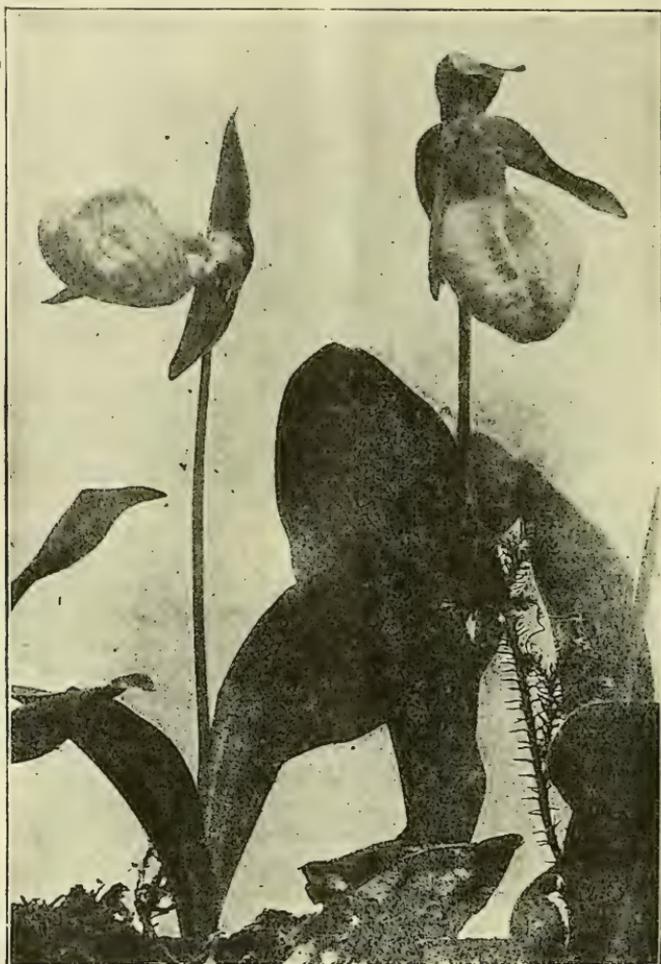


Figure 38.—LADY'S-SLIPPER (*Cypripedium acaule*).

From "With the Wild Flowers."

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VOL. XVIII. NO. 8.

ALBION, N. Y., AUGUST, 1901.

WHOLE No. 179

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WILL SELL CHEAP or exchange for AI sets with data. Lattin's catalogue. 1000 points and butts of arrows and spears, 3 for 1c exchange 5 for 1c cash; back numbers OÖLOGIST, "Birds" Part I, colored plates, "Birds of New Jersey," "Birds About Us," Abbott; Eastman pocket kodak; 22 and 32 cal. Smith and Wesson revolvers; a handsome tan sole leather gun case for carrying two guns; a four draw brass telescope; pair of boy's climbers; sets of cigarette cards; trap door spider's nest; large pieces of petrified wood from Arizona and pottery from the Cliff Dwellers; old copper cents and half cents; two glass topped cases, one, two drawers (walnut) 21x24; other a wall case 16x24 (cherry); also sets of AI birds eggs. Everything is AI and must go cheap for cash or AI sets. B. A. CARPENTER, Salem, N. J.

I AM COLLECTING this season in Southern Arizona in the Huachuca mountains. I am securing many rare and desirable sets, including Red-faced, Virginia, Audubon's, Black-throated Gray, Lucy's, Olive, Grace's and Sonora Yellow Warblers; Coues', Vermillion, Sulphur-bellied, Olivaceous and Buff-breasted Flycatchers; Stephen's Whip-poor-will; Rivoli, Broad-tailed, Cactus and Black-chinned Hummers; Arizona and Long-crested Jays; Scott's Oriole; Hepatic and Cooper's Tanager; Rock and Canon Wrens; Canon Towhee, Painted Redstart, Arizona Junco, Pygmy Nuthatch, Chestnut-backed Bluebird, White-necked Ravens and many other varieties too numerous to mention here. Everything will be prepared in the finest order possible—nests with all sets not larger than Jays. Parties wishing to build up their collections send for my full list and cash prices. Specimens sent on approval where parties are known to me or where good reference is furnished. O. W. HOWARD, Ft. Huachuca, Arizona.

WANTED.—May number, 1888, Vol. XXII, American Naturalist. WILLIAM BREWSTER, Cambridge, Mass.

WANTED.—Sets of eggs containing abnormal specimens, such as runts, albinos, monstrosities, abnormally colored or shaped eggs. Will give cash or good exchange. J. WARREN JACOBS, Waynesburg, Pa. 101

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| Rey, Die Eier der Vogel Mittheuropas, Part I, 24p, 5col, pl, of 18 full-size eggs, eagles, etc, 1900..... | 75 | Beal, The Meadowlark and Baltimore Oriole, 12p, 2 fig, (A. R. '95)..... | 15 |
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This popular Californian, illustrated magazine of ornithology begins its third volume with 1901, and its issues range from 24 to 32 pages in size. It controls the output of Western material, and prints the most interesting and valuable articles to be found in any "bird" journal. New features have been introduced for 1901, which will serve to make **THE CONDOR** a leader!

The March (1901) number is one of extreme interest, containing among other things a charming article on the nesting of the Golden Eagle by R. H. Beck, illustrated with three full page plates depicting nests in various rugged situations. Mr. E. H. Skinner contributes a valuable and most interesting illustrated article on the nesting habits of Giraud's Flycatcher in its Mexican home, and other interesting papers are presented by Joseph Grinnell, A. W. Anthony, R. D. Lusk and other well known contributors. A copy of this valuable number will be sent for 20 cents in stamps.

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THE OÖLOGIST.

VOL. XVIII. NO. 8.

ALBION, N. Y., AUGUST, 1901.

WHOLE No. 179

THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND
TAXIDERMY:

FRANK H. LATTIN, Editor and Publisher,
ALBION, N. Y.

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ENTERED AT P. O., ALBION, N. Y. AS SECOND-CLASS MATTER.

The readers of the OÖLOGIST will be pleased to learn that Mr. Walton I. Mitchell, who has an almost insatiable mania for *rara avis*, was successful in the capture of THE specimen of his ornithological career on June 25th at Hagerstown, Maryland—Miss Blanche

Crawford—"At Home 534 Summit Ave. St. Paul, Minn., after July fifteenth "

The entire oölogical collection of Miss Jean Bell has been purchased by the Hon. John Lewis Childs, Floral Park, N. Y. This collection is undoubtedly the finest in the world, composed exclusively of North American species. It is made up of over 30,000 eggs, some 10,000 perfect sets, covering 850 species.

Among other species it contains three sets of the California Vulture, fifteen of the Sand-hill Crane, six of the Everglade Kite, ninety of the Sharp-shinned Hawk, three of the Cory's Least Bittern, one Spotted Owl, two Whooping Crane, five Clarke's Nutcracker, etc., etc.

A feature of the collection is the many nests of which there are about 400 rare and perfect specimens

It is reported that Miss Bell spent over twenty-five thousand dollars in getting this magnificent collection together.

Under date of March 25th Mr. O. S. Biggs of San Jose, Ill., writes: "A friend sent me a fine specimen of a male Passenger Pigeon which was killed Mar. 12 near Oakford, Illinois. It is the first one I know of being killed here in 8 or 9 years. I have it mounted and in my collection."

The following note from Wm. Cudney announcing the death of Mr. D. Priddy was omitted through error from the May OÖLOGIST:

"I wish to announce to the readers of the OÖLOGIST the death of Mr. D. Priddy of Toronto, whose ad. has appeared in the OÖLOGIST from time to time.

He died suddenly from heart trouble a few days since while at his work. Mr. Priddy was a collector of shells and took quite an interest in that branch of science."

Bird Life of a Virginia Island.

Cobb's Island, a narrow strip of land lying on the coast of Virginia in the Atlantic Ocean near the southeast end of the peninsula formed by Northampton county, was in former years, a favorite collecting ground for ornithologists and oölogists. While of but a limited area, some nine miles in length, and six miles wide at its greatest breadth, its conditions as a breeding ground for sea-fowl were most favorable, and, each year, vast numbers of them nested along its stretches of salt marsh and beach. The ornithologist here found a bird-metropolis of a most interesting nature, presenting a population of thousands.

During June-July, 1895, I spent three weeks on the island among its birds. The season was a favorable one, and all the specimens were nesting. From the time our boat slipped from the mainland shore and set sail for the island, birds were numerous. Common and Forster's Terns, with their graceful airy flight, hovered around the boat, darting suddenly to the water sometimes, sending up splashes of spray and catching small fish that ventured too near the surface.

Merry Laughing Gulls, in pairs, flying low over the surface of the water, each bird of a pair keeping close to its mate, so that their wings nearly touched, indicated that the species was breeding. Black Skimmers passed us now and then, and toward the horizon a long black line of Surf Scoters rested on the water, this species lingering even at so late a date. Gull-billed and Black Terns, in small numbers, and a single Royal or Caspian Tern passed by the boat.

We reached the island late in the afternoon, and stopped at the little hotel. (now washed away.) The following morning, equipped with hip boots, some old clothes and a spacious wicker basket (for eggs,) I started for the salt marshes of the western side. In order to reach these to advantage I hired a sail boat and a worthy sea-captain to manage it. An hour later we were among the great colonies of Laughing Gulls (*Larus atricilla*.) Thousands of these birds hovered over the marsh, their cries, in union, creating a terrific din when we neared the nests. The sky was nearly obscured by the vast number of circling birds. This was my first experience among sea fowl, and, what a revelation it was! All over the marsh the nests were scattered. They were built of marsh grass and other similar material, sometimes raised two feet above the ground, and most of them held sets of three eggs, while sets of four were found in several. Many of the eggs were merely laid upon the "wind-rows" of weed and grass. I could have gathered several basketfuls of eggs, but took only a few of the handsomer sets. While looking over the the "wind-rows" I ran across a number of sets of Forster's Tern (*Sterna hirundo*) laid upon the rows without any attempt at a nest, a mere depression having been made and the eggs laid in it. I also ran across several fairly well made nests of this species, of grasses, placed on top of the "wind-rows." As I went to examine a particularly well made Gull's nest, I nearly stepped on a Clapper Rail (*Rallus crepitans*) that was sitting on her nest of nine eggs. This was my first set of this species and I was naturally elated at my find. The Captain perceiving this, told me that I could gather a barrel of these eggs if I so desired, which statement proved true, and some twelve sets taken. The Clapper Rails themselves were not much in

evidence, we only getting an occasional glimpse of them as they skulked amongst the high marsh grass. The nests are built of marsh grass and placed a foot or so above the ground in the high grass. The grass surrounding the nest is pulled down by the birds, so that the ends hang over and form a canopy above the nest. This habit facilitates locating the nests, for by scanning over the marsh and noting where the even aspect of the grass is interrupted by the ends being thus pulled over, the collector may find many a nest that would otherwise be overlooked. In this same marsh we found several nests of the Seaside Finch, and saw many birds of that species. The nests are difficult to find. They are usually placed among the grass tops, and the species has a penchant for selecting the grass bordering on the small sloughs. After seeing the wonders of this marsh, I returned to the hotel and worked all of the afternoon and most of the next day blowing the specimens.

On the following day I started early to investigate the bird-life of the beach, and especially to visit the large colonies of Black Skimmers at the northeastern end. This time there was no need of a boat, but the Captain's services were again secured and he appeared on time, driving the only horse on the island hitched to a delapidated two-wheeled cart. As we proceeded along the beach, about the first birds to attract my attention were a pair of Wilson Plovers. They were acting as if their nest was near, and a careful search revealed a cute little juvenile, covered with down and faintly speckled, crouching among the pebbles of the beach. The mimicry was perfect, and it was by mere accident I noticed him. Several American Oystercatchers were noticed on the beach and I found a nest, or rather a depression in the beach, with three eggs. One egg was

"pipped," and so I did not disturb the set. Another pair evidently had a nest near by, but a careful search failed to reveal it.

Toward the northeastern end Common Terns (*Sterna hirundo*) were very numerous, being in hundreds and their nests were scattered all over the beach, the eggs being laid in mere depressions among the pebbles, and the eggs constituted the average set.

At the extreme northern end, on the eastern side, we found the Black Skimmer colonies. Hundreds upon hundreds of Skimmers were congregated and nesting. As we neared the nests, the birds set up an awful uproar, their "barking" notes together with the screeching of the Terns making an odd combination of discord. When we reached the nesting ground, a great line of Skimmers began to fly around and around in single file, turning toward the ocean, then curving toward the land again, and approaching us directly, but only to curve aside at the distance of some fifty or sixty yards, all the time uttering their peculiar "Ohe hark" "Ohe hark" "Ohe bark." Their oddly shaped red-orange colored mandibles pointed downwardly, and the pure white of their underpart plumage contrasted strikingly with the black of their upper parts. Now and then a skimmer would fly at us, coming so close sometimes as to make us dodge but they always curved aside when within three or four feet.

On the sand dunes and on the sandy beach were hundreds of their eggs, remarkable for their beauty, their ground color being averagely of a bluish white, though sometimes a very clear white. The markings are profuse and of umber, lavender and black. Four eggs constituted the full set, though sets of three eggs were common. The eggs were laid in rather deep depressions of the sand, and on a single sand dune I found as many as seven sets. Owing

to the exposure the incubation is largely accomplished by the sun's rays, and the birds do not constantly sit upon the eggs. In the same locality with the Skimmers, we found a number of Gull-billed Terns nesting, their eggs laid in depressions in the sand and averaging four to a set, though several of three were found.

Formerly the Royal Tern nested in great colonies at this part of the island, but not a bird of this species was noticed. Mr. Robert Ridgway found the Royal Tern in great abundance on the beach when he visited the locality many years previous (See Davies' Nests and Eggs) and records that its eggs were so thick on the beach, that it was with difficulty that he walked without stepping on them. The Caspian Tern also formerly bred abundantly on the island, but we did not notice its eggs on our visit.

Thousands of Least Terns (*Sterna antillarum*) used to nest on the island. but, alas! they have all been sacrificed to the millinery trade, thousands of them having been shot by mercenary hunters who sold the skins to dealers in New York. Not a single specimen did we see, and the Captain informed me that it had been a long time since he had observed the species on the island. The Willet is another species that has decreased on the island. I only saw a few pairs.

But now, Cobb's Island is not what it used to be. The ocean has made great inroads upon it and it has greatly decreased in area. The little hotel has been washed away, and the birds are not as numerous as formerly. But there is an abundance of bird life remaining. The Skimmers and Gulls are in great numbers yet and the colonies are still interesting. The collecting days for the island, however, are over. All sincere oölogists must certainly appreciate that there is a marked decrease of bird life through-

out the country. There is no excuse nowadays for basketfuls of eggs. What remains of these Cobb's Island colonies, will be protected. The A. O. U. has already taken measures to this end, and happy is the thought, that for many days to come Cobb's Island's feathered population, a delight to the eye of the bird lover, unmolested and protected, will increase as the years roll by.

JOHN W. DANIEL, Jr.,
Lynchburg, Va.

Some Twice Occupied Nests and Other Notes.

On July 1, 1897, at Torresdale, this county, I took a set of three eggs and nest of the Great-crested Flycatcher from a large knot hole 20 inches deep, 10 feet up in an apple tree.

On May 2, 1898, I took a set of three eggs of the Flicker from the hole capturing the female sitting on them which I gave its liberty

May 7 took set of 5 eggs again capturing the bird which again was released. On May 28 the hole contained 8 two-third incubated eggs. Captured the Flicker brooding them and let her go.

On April 18, 1899, found a Screech Owl roosting in the hole. It has not since been used.

June 9, 1898, took a set of five Flicker's eggs from cavity excavated in a maple stub 15 feet up. On April 15, 1899, from the hole took a fresh egg and the female Screech Owl (gray). The owl lived only two days and dissecting her I obtained another egg and found 5 small eggs in her ovary.

June 27, 1898, at the above locality (Frankford) took two eggs of the Red-headed Woodpecker from a cavity 30 feet up in a maple stub. This hole had been used since during 1899, '00, '01 by *Passer domesticus*.

On July 20, 1900, at Riverton, N. J.,

took set of 3 House Wren's eggs from Flicker's cavity 20 feet up in a stub. On the same day at New Albany, N. J., took a set of House Wren's eggs from a Downy Woodpecker's hole 15 feet up in a branch of a dried tree in a marsh.

On May 22, 1901, at Holmesburg, this county, took a set of 5 fresh Rough-winged Swallow's eggs from an unfinished Kingfisher's hole excavated in the top of an unoccupied quarry. In 1899 a friend found a Rough-winged Swallow's nest in an old Kingfisher's hole but tore it out before it was finished.

On April 26, 1901, at Volunteertown, this county, took set of 4 eggs of the Robin from a nest situated on a girder of a steel railroad bridge. On May 7 took another set of 4 from same nest.

In 1899 took 14 eggs of the Flicker, several sets, from a cavity excavated in a willow 15 feet up. During 1900 I took several other sets. In the winter two Screech Owls were taken from the hole. May, this year, a boy robbed a *Passer domesticus* of her eggs, the nest of which was built in the hole. June 8, this year, I took a set of 6 *Passer's* eggs from the hole.

April 14, 1898, took a set of 3 fresh eggs of the American Sparrow Hawk at Frankford from a Flicker's hole 35 feet up in a black oak stub. In 1897 a brood of Flickers were raised in the hole.

RICAARD F. MILLER,
Philadelphia, Pa.

Albino Eggs of *Sialia sialis*.

Of the many specimens of runts, curiously colored and shaped eggs that I have seen in my many years as a student of oölogy, it has never been my good luck to see a pure white set of albino eggs of the Bluebird until this season, and this was only accomplished through the kindness of my naturalist friend, Mr. J. E. Teague of this town, who has ever been a close observer of

the birds of this locality, and to him all credit should be given for had it not been for him the eggs would never have been found.

On April 1st as Mr. Teague was passing through an old orchard of apple trees he saw a Bluebird fly from a hollow tree several rods away. He at once thought a nest of common eggs of the Bluebird was in the tree, but being much interested in oölogy he went to the tree for a look at the nest. The hole was in the main trunk of the tree, about five feet from the ground and about 10 inches in depth, a vacated nesting place of the Flicker. On looking in Mr. Teague beheld not blue eggs but pure white ones, four in number. This was indeed a surprise.

On May 2d he again visited the nest. The Bluebird was on the nest and had to be driven from the hole before the eggs could be seen. This time five eggs rewarded his gaze and this completed the set as no more were laid.

On May 8th Mr. Teague notified me of the finding of the nest and eggs and on May 10th I tramped six miles through the mud in a heavy rain storm and collected the nest and eggs. They are very glossy and look like eggs of the Woodpecker, closely resembling eggs of the Yellow-bellied Sapsucker (*Sphyrapicus varius*), both in color and size. They measure .80x.62, .81x.62, .78x.61, .78x.61, .82x.63.

The nest was very large and bulky and composed of dried grass, lined with the same and fine rootlets.

The nest and eggs now repose in my cabinet and I prize them very highly.

GUY H. BRIGGS,
Livermore, Maine.

"Oh, you cruel boy, to take those eggs out of the nest! Think of the poor mother bird when she comes—"

"The mother bird's dead, miss."

"How do you know that?"

"I see it in your hat!"—Punch.

Unusual Nesting Sites of *Melospiza fasciata*.

The Song Sparrow in the spring builds her nest on the ground or near it in this locality (northern Philadelphia) but on May 2, 1898, I found a nest in an unusual situation. It was placed in a hole in the wall, inside wall, of an old ruin, roofless spring house, protected from wind and storms except on the northeast. It was over 12 feet from the ground and empty when found, but five days later (May 7) it contained four eggs, which were collected with the nest. Both nest and eggs typical, the nest composed entirely of grass stems, lined with horse hair.

Later in the season, in late June and July, it is not rare to find second nests six and seven feet up. Why the birds should have chosen the above *situ* for a first nest I cannot explain.

RICHARD F. MILLER,
Philadelphia, Pa.

Potash.

I note Mr. Bowdish's article in last OÖLOGIST.

When I published my "Directions for the Preparation of Eggs," I advised the use of caustic potash. I was promptly "taken down" by a prominent western ornithologist for being behind the times. He advised the use of pancreatin as a much more satisfactory drug. Since then I have thoroughly tried this drug. I do not find it as quick nor as thorough as caustic potash, and it is very expensive, while caustic potash is cheap, and can be had anywhere.

I heartily endorse Mr. Bowdish's position and still believe in the caustic, combined with a steady hand and plenty of patience.

ENNEST H. SHORT,
Rochester, N. Y.

How Some Birds Capture Their Prey.

(Continued from July Number.)

his beak. The Great-horned Owls that a friend of mine owned for two years or more, and which he reared from the nest, finally escaped and at once visited a neighboring chicken coop and killed several chickens before they were detected. This shows the latest ferocity in predacious birds.

The Great-horned Owl is an excellent provider for its mate and growing family. One nest visited held upon its edges the following food supply—remains of one Ruffed Grouse, parts of two hares and a Woodpecker, besides the feathers and hair of other birds and small mammals. This Owl is the only Owl that is known to be destructive to game and of no benefit to mankind, and it stands in the list with the Cooper and Sharp-shinned Hawks as a marauder of the worst type. Still I cannot but think that there must be some redeeming features, for as with the Butcher bird I cannot think that he is as black as is painted.

The Cuckoos are among the most useful birds that we have. Their food in season is largely of caterpillars. I once witnessed a Black-billed Cuckoo attack a nest of the tent caterpillars, tear into it and eat a surprising number of the occupants of the structure. The Cuckoos also eat grasshoppers and a great variety of other insects and also fruit of several kinds, more especially berries. In following this diet of caterpillars the stomach must be well filled with hairs, and this is so to the extent of having the organ look as if lined with hair.

Everyone who has studied birds knows of the oddly formed tongue of the Woodpecker, and it is easy to understand its adaptability in drawing forth the insect life that is hidden in the decayed wood. The Woodpeckers in the great lake region have mainly the same habit in securing food from the cavities which they

dig to uncover the insect life, and the dainty Downy works and feeds in practically the same manner that the large Pileated Woodpecker follows. But there are two exceptions to the general habit, or we may say that there are charges at times. These differences occur in the Yellow-bellied and Gold-winged Woodpecker; for the former at times varies his diet with liquid sweets, while the latter sometimes leaves the tree trunks and plunges his bill into the soft earth of the ant hill in search for this kind of insects. Therefore, these two Woodpeckers are at times known as the sap-sucker and grubber.

The Golden-wing leaves its perch on trunk and limb, and takes up a position on an ant hill or even on the level ground, where it devours the ants with great satisfaction. This is the more astonishing change in a bird when we consider that there are so very few birds which will eat ants at any time, and I do not know of another species in my neighborhood which is largely interested in ants, excepting the variable Sap-sucker. Someone has claimed that the Yellow-bellied Sap-sucker embraces 36 per cent. of ant food, but then this matter of food differs in season, and both the Yellow-bellied and Flicker arrive some time before the ants appear in any number in the spring.

Upon its arrival in late March, or more likely about the tenth of April, the Yellow-bellied Woodpecker proceeds to bore a number of holes in the bark of certain trees producing sweet sap. These usually selected are the sugar maple and common planted evergreen, though others are often bored, including the tulip tree. The holes are generally about a quarter of an inch in diameter and are rarely much more than that in depth. The holes are usually elliptical in shape, and especially so on the coniferous trees. Many claim that these holes are bored so that the bird may secure the insects which will

congregate around the sweets, but I think this a ridiculous notion, as the Sap-suckers are often seen feeding from these holes when there is an April snow storm and much too cold for any insects to appear on the bark or anywhere in the open. The Sap-sucker is easily approached when feeding and I have stood at the distance of five or six yards and watched them many times, and I am fully satisfied that they very rarely catch an insect in their first week's stay at the north; but that they sip the sap from the bored holes is surely the case, for I have witnessed the act scores of times.

In the Belted Kingfisher we have another species that gets its living by diving in the lake and stream, but this plunge is entirely unlike the plunge of the Pelicans or Osprey. The Kingfisher hovers as does the Osprey and as followed sometimes by the Pelicans, and like those larger fishers is also a surface fisher. The Kingfisher descends at an angle of sixty to eighty degrees and enters the water bill first, but so quickly is the stop made at the surface that in many cases the bird does not disappear beneath the water, though I have seen the Blue Angler remain ten seconds under the surface. The prize does not average more than three and a half inches long and many minnows of no greater length than two inches are creeded by this law breaker; however, a five inch shiner is occasionally brought to the surface. When a small minnow is captured it is generally swallowed whole, the bird perching itself and taking the little chub head first. But when a minnow is too large to swallow whole the prize is dissected and eaten piecemeal, and this operation is sometimes performed in the presence of observers; but I have only once seen the dissection. The bones of the fish are usually regurgitated after the carcass is digested, after the manner of the Owl's process of getting rid of the bones of small mammals

it has eaten. These bones when ejected in the burrow are carried away from the nest as the birds are very cleanly in their sand house.

These anglers of the lake and stream are not confined to a diet of fish, though I believe that they prefer minnows to anything else and they are found about streams and lakes at all times. They not rarely pick up the larger insects and they often eat grasshoppers, and I once observed one catch and swallow a small

frog. It is said that in Arizona and other arid districts, the Kingfishers live mainly on insects and lizards, presumably from the lack of suitable waters at certain seasons. It is well that a bird of a fish-eating habit can accommodate its ways to the means offered in a desert land.

MORRIS GIBBS, M. D.

(To be Continued.)



MISS JENNY.

MR. CHUPES.

THE DRAMATIS PERSONÆ.

From "Mr. Chupes and Miss Jenny."

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Pan-American Notes.

A fine lot of Pueblo pottery and relics of different sorts is shown in the Ethnology building of the Pan-American Exposition. The Pueblos, who were dwellers in the plains and in the cliffs as well, are one of the most interesting, from an archaeological point of view, of all prehistoric people. Their civilization was remarkable, and their ingenuity in pottery making, basket weaving, bead work and many other things, very great.

They had many peculiar customs, ceremonies and symbolic rites, and their pottery is ornamented with figures the significance of which puzzles the novice and expert alike. One of their peculiar symbols was a broken instead of a continuous line drawn about a bowl or other dish, suggesting perhaps the finite character of life. A bowl shown in the exhibit of the Pueblo pottery has the reproduction of two feet upon the bottom of it, inside, suggesting possibly the transitory and insignificant character of terrestrial existence.

Fine specimens of the famous "black and white ware," are shown, as well as the "red ware," most of which is black on the inside. A number of specimens finished so as to give the outside a corrugated appearance, are shown.

Many ingenious fine tools, finished stone implements, ornamental trinkets, presumably having religious significance, are on exhibition in the cases.

The basket work of Indians is very wonderful. Baskets made by comparatively modern Indians are shown. Water-tight baskets in large numbers and in many varieties are seen in the exhibit. All are ornamented with figures woven in when the basket was made.

The Pima Indians are those most famous for basket making. They even used baskets for cooking utensils, covering them with a thin layer of clay to keep them from being destroyed by contact with the fire.

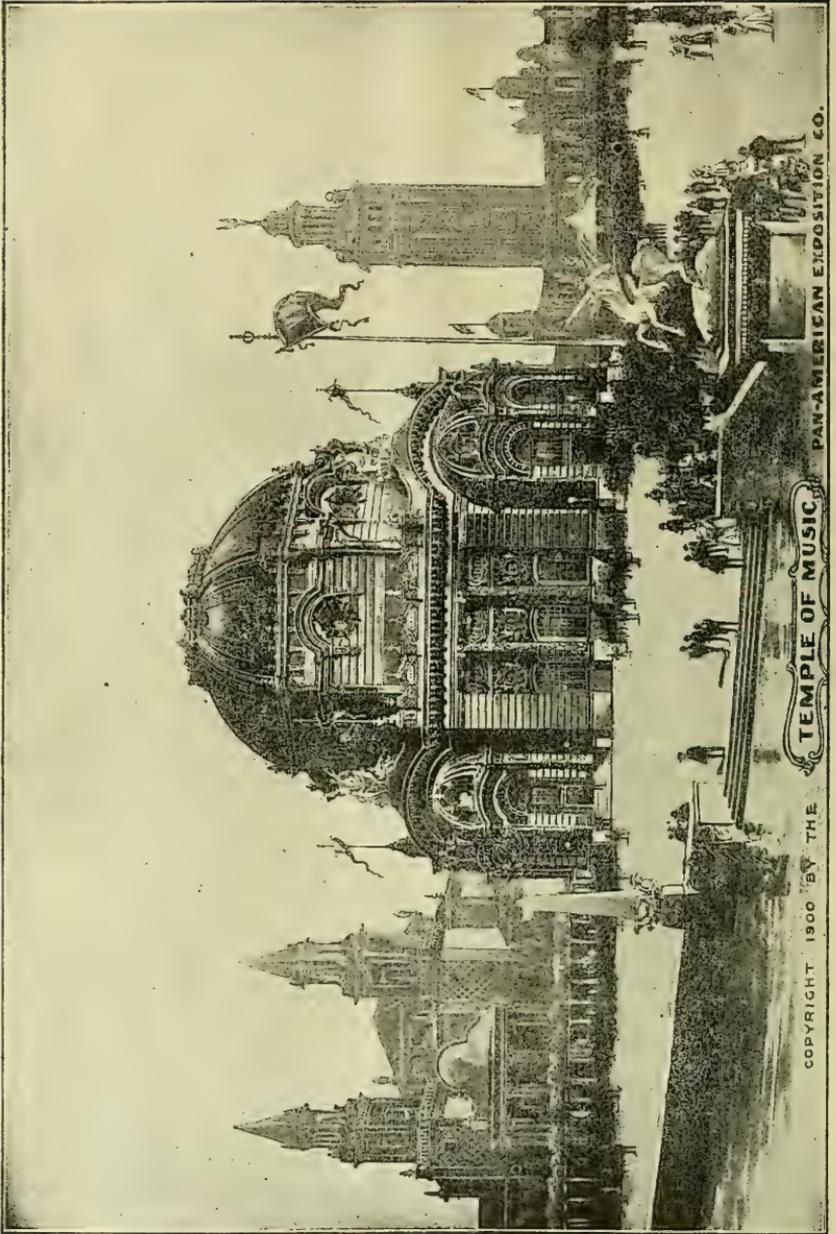
An instructive exhibit of flint implements from Mill Creek, Union County Ill., occupies five cases in the balcony of the Ethnology building of the Pan-American Exposition. Rough pieces of flint are shown in different stages of completeness, and incompleteness. On the left a number of blocks of flint are shown, and, as one walks

along the line of cases, he sees the various implements assuming a more nearly finished condition, and finally the complete flint spade, hammer, axe, knife, or whatever domestic or agricultural implement the crude work produced.

In working the rough tools a stone bearing some resemblance to the shape the implement is to assume is usually selected to save labor in chipping and flaking the rough block.

Many of the implements are extremely crude, being hardly more than flat stones used, probably, in excavating; and round hard stones used in pounding and flaking the larger pieces of flint. Many of the stone spades and axes, however, are chipped down to a remarkable degree of thinness and must have made very effective tools.

The Florida exhibit of sponges in the Horticultural Building of the Pan-American Exposition, interests all who enter this palace of wonders. This is an important industry in that state and should be developed. Mr. T. M. Wier of Tampa, the Commissioner from Florida, says: "The Florida sponges are of many varieties, differing in commercial value from \$2.00 to a great many dollars per pound. It is one of the largest industries in the state, more than 100 vessels being engaged solely in this trade. The business is carried on almost entirely by negroes. It is not an uncommon sight to see a vessel's captain and all of the crew composed of colored men. The sponges are gathered by means of a long pole with a hook attached to the lower end with which the sponge fisherman is very expert. He lies prone upon his stomach in the stern of a boat looking through an ordinary water bucket with a glass bottom, which does away with the glare from the water and allows him to survey the bottom leisurely while the boatman rows or sculls the boat. A schooner lies at anchor nearby, from which a half dozen or more of these small boats fish, which returns to port when it is loaded or at night, as the case may be. The men all share and share alike of the cargo, the captain receiving a larger portion and the owner of the vessel one-quarter of the profit. Anclote Harbor in Hillsboro County and Key West are the principal sponge stations off the coast of Florida.



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So much has been said and printed about Midways and street fairs that it would seem to the casual observer that little more remains to be said. But the more careful student of methods and modes of amusing the public realizes that as long as Midways continue to be popular, so long will there be a large variety of topics to discuss about them. That street fairs are beneficial is no longer questioned.

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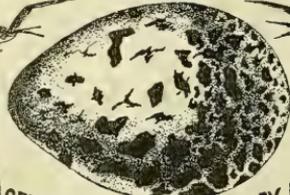
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VOL. XVIII. NO. 9. ALBION, N. Y., SEPTEMBER, 1901. WHOLE No. 180

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FOR SALE.—Copper Botanizing box, triple nickel, 8x6x20, drop handle, strap attachment, bargain at \$2, cost me \$5.50. A. J. STODOLA, 649 Blue Island Ave., Chicago, Ill.

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FOR SALE OR EXCHANGE.—A fine lot of eggs and skins, collected by myself last June in north-west Canada; also photographs of bird's nests of Little Brown Crane, Marbled Godwit, Wilson's Snipe, Northern Phalarope, Semipalmated Plover, Bairds' Sparrow, several species Grebes and Ducks' nests, etc. Photographs 15 cts. each, unmounted, or 2 doz. kinds for \$3. W. RAINE, Kew Beach, Toronto, Canada.

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Jardine, Hummingbirds.
Kearton, Wild Life at Home.

PAMPHLETS AND EXCERPTS.

Barnard, Birds of Chester Co., Pa.
Elliott, List of Described Hummingbirds.
Gunn, Egging Expedition to Manitoba.
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TAXIDERMY.

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Nesting Habits of the Broad-tailed Hummingbird.

The nesting habits of the Broad-tailed Hummingbird, while, perhaps, not unlike those of the Ruby-throat, are at

least worthy of note in its peculiarities.

It is a common breeding bird in this locality, often noticing the male in its bright colors and sharp whistling aerial flights; the female humming, nest building and feeding.

One peculiar trait of the male bird is its manner of flight during the breeding season. As the female is occupied in nest building, incubating, etc., her mate enjoys the time in sporting, rising by short, sharp flights to a height at which it is seen with difficulty and it returns to earth with a plunge, terminating in a miniature booming sound, not unlike that of the Nighthawk. Rising again as before and repeating until the little thing seems exhausted and alights on a bush or twig to rest.

The sharp chattering or screeching note uttered during its flight is a peculiarity of the male only and from close observation I believe it to be made by the wings of the bird.

The first nest that I ever saw was built under a bridge and attached to a knot on a small stick, one end of which was held firmly between the planks.

Numerous nests of this species have been observed during the past few years since the one above noted, and all, with one exception, were saddled upon dead branches of oak saplings close to the tree-trunk.

The first nest noticed in '97 was discovered by seeing the female carrying material for its construction. Its position was on a dead stubby branch, close to and under the body of a leaning oak seven feet from the ground and protected from sun and rain by the body of the tree.

One egg was deposited and covered by the down in the bottom of the nest.

As I placed my fingers in the nest, the egg was crushed and the bird had abandoned it. A few days later another nest was found nearby containing a rotten egg in a position no different than the former, but at a height of twelve feet above ground. As this was July the second nest found was, undoubtedly, the first of the nests built by the birds.

On May 25, 1898, a female was observed building her nest in the same clump of trees, the situation being in no wise different from the two nests above described eight feet above ground.

On June 3d the nest and two eggs were collected, but by the 18th another nest with eggs were found only a few feet away from the place where the first nest was found. The height, position and protection by the tree-trunk were very much the same as in former nests noticed.

The female was caught from the nest and identity made certain in this instance, after which she was given her freedom.

Two exceptions to the above have been noticed where the nests were placed on a forked branch of the oak, one to two feet out.

One nest observed differing from all others seen is worthy of mention; while as a general thing the nests are covered with lichens, this one contained an abundant supply of moss woven into the exterior and no lichens.

The female is not easily noticed by one not familiar with Hummingbirds, as she quietly hums from flower to flower, the humming of her wings being heard but a few feet away.

P. L. JONES,
Beulah, Colo.

The Food Supply of the Baltimore Oriole.

To the enthusiastic working ornithologist there is not a subject of more interest than that of food supply; for

other things being equal, this governs to a large extent, the geographical distribution of the various species. Important as the subject is, however, it is one which is overlooked by a large number of the rank and file of bird students, who, while interested, do not devote the time they should to this most important division of the study, but content themselves with reading what others have written. For myself, I would rather toil a whole season without other result than to establish a hitherto unknown point, than to add a thousand skins to my collection and learn nothing.

Let us consider as a start, six of our birds which we are constantly meeting with during the spring and summer months, viz: Baltimore Oriole (*Icterus galbula*), Catbird (*Galeoscoptes carolinensis*), House Wren (*Troglodytes aedon*), Meadow Lark (*Sturnella magna*), and the Mockingbird (*Mimus polyglottos*).

The Baltimore Oriole is so well and so favorably known about the land by his various names of Golden Robin, Hang Bird, etc., that it may seem somewhat out of place to consider him, but the food habits of this interesting creature are fully as beneficial as the plumage and song are pleasing, and where ever this "flash of ornithological flame" chooses to build its pendulous abode, it is as safe as the nest of the Stork on the roof of the Hollander.

The habitat of the Oriole extends throughout the eastern United States north of Virginia, and at times somewhat south of there. In the Mississippi valley, however, it reaches farther south than on the Coast. In New England it is especially abundant, and extends west over the wooded portions of the great plains, and is finally replaced by its brother in appearance, Bullock's Oriole (*I. bullocki*). Here in New England we look for him with the bursting apple tree buds, about the 15th to the 30th of May, and westerly he is often seen as early as the middle of April. Climatic

conditions affect him little, directly, except as far as his food is concerned, and as this consists largely of the insects that live in the foliage of trees, the arrival of *I. galbula* is postponed until they have become plentiful.

It begins its southern migration about the second week in August, and by the first week in October we look in vain for the beautiful flash of color so frequently seen but a few short weeks since.

I took one specimen at Woods Hole, Mass., on the 2d of November, but have seen none later, although the capture of one as late as Nov. 16th is recorded from Conn. By this date, however, ordinarily, nothing but the deserted nest, swinging from the leafless bough, as the bleak November blast howls among the trees, tells of the occurrence of *I. galbula* in that locality. The winter is spent in the warm southern countries beyond the U. S. border.

The present paper on the food supply is confined to the results reached from the examination of eighty-six stomachs, from birds taken from ten states, and covering a range from Mass., westward, to North Dakota, and were taken from April 10th to Sept. 3d, inclusive. The gross contents of these stomachs may be stated relatively, as follows: Animal matter (principally caterpillars and beetles), 72.5; vegetable matter (principally wild fruit), 12.; mineral matter (not food and can therefore be eliminated) 16.4; the additional 9 per cent. being water and mixed gastric juices.

From the reports received from western points, it appears that the largest amount of insect food was found in those stomachs examined from May 1st to June 20th, averaging between these dates about 87 per cent. of the whole contents. The minimum amount of insect food was found in those stomachs examined in April and July, when it was found to be only about 65 per cent. Caterpillars were by far the most abund-

ant insect; in fact during the time when these insects were most plentiful there was scarcely any other insect to be found in the stomach.

A general average between the caterpillars and beetles in the stomachs examined, would give as a result caterpillars 30 per cent., beetles 22 per cent., and the other stomach contents making up the balance.

The caterpillars were found to be more numerous in the stomachs after the 1st of July than before, owing, no doubt, to the increased supply of these insects. Beetles are the article of food next pleasing to the Oriole palate, and though only eaten during May, June and July, the click or snapping beetles (*Elateridae*) constituted nearly 10 per cent. of the food for these months. This seems a trifle strange from the fact that the hard shells of these beetles render them seemingly undesirable articles of diet. However, let us not dispute the good intentions of *I. galbula*, for these beetles, together with their larvæ, the "wire worms," are among the most destructive to the products of the farmer, and as there are over 500 species of snapping beetles in North America, any aid in their destruction should be gladly welcomed by him.

Among the other beetles used by this bird for food are the May beetles, (*Scarabaeidae*) the dung beetles (*Aphodius*) and several of the leaf-eating beetles (*Dichelonycha*). Among this latter, the striped squash beetle, (*E. vittata*) which in the larval state bores at the roots of squashes and cucumbers, and in the mature state feeds upon the leaves, may be mentioned. *Odontola dorsalis* and *O. rubra*, which feed on the leaves of the juniper and apple, respectively, and at times ruin these trees, are also a favorite with the Oriole. The Snout beetles or weevils (*Rhynchophora*) are also taken by this bird in small quantities. The *Caribidae* or cannibal beetles, which feed for the most part on the injurious in-

sects, do not form an appreciable article of diet for the Oriole, and it would seem that as both are intent upon a common purpose, the Oriole passes over this beetle without disturbing it.

Wasps, (*Hymenoptera*) bugs, (*Hemiptera*) among the latter being many of the stink bugs, (*Pentalomidae*) the assassin bugs, (*Reduvinidae*) which feed on other insects, the scale lice (*Coccidae*) and the common plant lice (*Aphidae*); the two latter being among the most destructive insects known. Flies (*Diptera*) are also common food, the larvae of the March fly (*Bibio*) being greatly in evidence. During the months of June, July and August, the grasshoppers and locusts were found in the proportions of 2, 10 and 12 per cent., respectively. Spiders also constitute a favorite article of diet, and gradually increases to nearly 10 per cent. of the animal food in August.

The vegetable diet of the Oriole consists almost entirely of fruit, but seeds and grain are sometimes taken. The favorite fruits are cherries, raspberries, blackberries, mulberries and juneberries.

The examination of these stomachs has shown that this bird is a great insect destroyer; that it destroys immense numbers of caterpillars, grasshoppers, bugs and noxious beetles and does not prey upon the predacious or useful insects. Let, then, the farmer continue to hold his good opinion of this beautiful bird and accord it the protection it deserves.

C. C. PURDUM, M. D.

"Some Twice Occupied Nests."

After reading the article by Mr. Richard F. Miller, Philadelphia, Pa., in the August OÖLOGIST, under this heading, I thought, perhaps, my experiences in that line would not come amiss.

April 16, 1897, collected a set of three Phoebe eggs. Nest placed on a beam

under a large covered bridge. In collecting I had to remove the nest, which I replaced on the beam, but there was another beam that crossed beam No. 1 and it was on the other side of No. 2 that I placed the nest. This was not in its original position. A beam separated the two positions.

May 15 1897, I returned to the bridge and found the nest gone from where I had placed it, but there was a nest in the place where I had found the one on April 16. There had not been water high enough to carry the nest away. Did the birds tear the old one apart and rebuild it in the old position? I think, undoubtedly, that they did, although they would have to carry the material past an 8-inch beam. Near Arden Sta., W. Co., Pa.

May 25, 1897, collected one set of seven eggs of the Flicker from a hole in the limb of an apple tree in an orchard.

June 5, 1897, I returned to the Flicker hole, from which I collected the set on May 25, and collected another set of seven eggs. Near Washington, Pa.

June 18, 1898, collected a set of three eggs of the Kingbird from a nest fifteen feet high in an apple tree in an orchard near Tarkio, Mo.

June 23, 1898, I found a pair of Mourning Doves had taken possession of the Kingbird nest, from which I collected the set on the 23d inst. They relined it with a few straws placed in the bottom. I noticed that although the Doves built a nest for the first set, for the second and third they always took a deserted Robin, Kingbird or Blue Jay's nest and placed a few sticks or straws (generally the latter) in the bottom and proceeded with incubation.

June 15, 1900, collected one set of five eggs of the Barn Swallow. I also took the nest, situated on a beam of a small bridge over a run.

July 10, 1900, I found that the Swallows, from which I took the set of five eggs on June 15, had built a new nest

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List No. 7, Aug. 15, 1901.

Superceding Lists No. 1 of March 15th and No. 5 of July 15th.

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| Rey, Die Eier der Vogel Mithleuropas, Part | |
| I, 24p, 5col, pl. of 18 full-size eggs, eagles, etc. | |
| 1900. 75 | |
| —, Do do, Part II, 16p, 5col, pl. of 40 full- | |
| size eggs, Hawks and Eagles 75 | |
| Ridgway, Catalogue of Old World Birds, 20p | |
| 65 | |
| —, Directions for Collecting Birds, 28p 32 | |
| —, Genus <i>Sittasomus</i> , 4p. 15 | |
| —, Nomenclature of N. A. Birds, 94p | |
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Ornithological and Natural History Publications.

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Write wants.

on the same spot as the former one, and had four eggs. Near Tarkio, Mo

June 18, 1900, collected one set of five eggs of the Red-headed Woodpecker in a hole in a maple tree in a grove beside the house on a ranch some three miles from town.

June 29, 1900, collected one set of five eggs of the Red-headed Woodpecker from the same hole as the set of the 18th inst.

July 10, 1900, collected one set of four eggs of the Red-headed Woodpecker from the same hole as sets of June 18 and 29.

I have found that the Red-headed Woodpecker will do this every time, and the third set generally, if not always, consists of four eggs. Near Tarkio, N. W., Mo.

April 19, 1901, collected one set of five eggs of the Phoebe from a nest on a beam under a bridge. (This is the same bridge situated on the same place on the same beam as were the sets of April 16 and May 16, 1897.) I replaced this nest, but it was carried away two days later by high water.

June 8, 1901, collected one set of five eggs and nest of the Phoebe in the same bridge and on the same place on the beam as the set of April 19, 1901. Four eggs out of this set (June 8) were spotted, two heavily around the large end. The eggs in the set of April 19 were unspotted.

May 16, 1901, collected one set of four eggs of the Red-winged Blackbird Nest situated six and one-half feet high in a small willow in a creek bottom.

May 30, 1901, while passing the Red-wing's nest, found the 16th inst., with a friend, was more surprised to see an Am. Robin sitting on the nest. On examination we found the nest contained one egg and the Robin had relined it with grasses and built the side up about one-half inch with mud and grass. Several days later I was passing and I called on Mrs. *Merula migratoria* and

found her at home. The nest contained four eggs, which I photographed and left.

May 30, 1901, collected one set of five eggs of the Red-winged Blackbird. My friend, who was with me, also collected a set of five Red-wings. I enclose you a photo of same. These are the only sets of five eggs of the Red-wing which have come under my notice. The eggs in both sets were rather smaller than the average Red-wing eggs and rather spherical. Both sets are well marked with splotches and streaks of black.

Before I close I wish to thank Mr. Geo. W. Vosburgh, Columbus, Wis., for the paragraph in July OÖLOGIST where he mentions about "The Chicago Record-Herald," Audubon series of colored photographs. It has been the means of selling more than one "Record-Herald" here.

E. R. FORREST,
Washington, Pa.

How Some Birds Capture Their Prey.

(Continued from August Number.)

Among the regularly insectivorous birds the Whip-poor-will swallows the largest insects of all; frequently engulfing large moths and beetles the size of the June bug. In one bird that I dissected there were over thirty insects, many of which I could identify. They were of several species and embraced beetles, moths and a few dipterous insects. While the two Goat-suckers known in the great lake region, the Whip-poor-will and Night Hawk, or Bull Bat, as it is sometimes called, feed upon the larger insects, the Chimney Swift only captures the smaller species, relying mainly on the small two-winged insects, flies, 'squitoes and gnats. The former birds dash upon their prey in plunges and side-flops, while the Swift engulfs its food as it rapidly revolves. The flight and capture are quite similar

in the movements of the Whip-poor-will and Night Hawk when the two birds are feeding, but the sustained flight of the latter is quite different in the open from the more curtailed wing movements of the former in the woods. I have but rarely seen the Whip-poor-will flying and feeding in the day time, though they sometimes do so in the nesting season, and I once shot a specimen which had a crop full of plunder. The Night Hawk is a well known feeder during the daylight hours while the young are small and I have seen the old birds feeding and shrieking their skeet as early as two o'clock p. m. But I have never seen this habit of feeding in broad daylight except when they had young. The Night Hawk sometimes runs, or more properly, waddles about on the ground in quest of food, and I have seen an old bird gobble a black cricket in broad daylight. Once the observance of a rare sight was afforded me in a partial clearing, where I beheld an old Night Hawk feeding its one young one. This was in the day time and the old bird flew close to the nest and then scuttled to the little one, which was a fluffy bit of down, with closed eyes. The old bird placed its bill within the mouth of its offspring and apparently regurgitated the food for the young. This act was repeated three times in the space of a half minute, after which the old bird closed its eyes and both remained quiet on the ground. I have repeatedly seen the same act performed by the Chimney Swift on a nest in the gable of the barn where they have nested continuously for over thirty years.

From close observation I am led to think that nearly all insect-feeding, as well as many other birds, feed their young in this manner. The Ruby-throated Hummer is another species which macerates its food before feeding its very young, and when offering them delicacies, as honey and insects,

thrusts its long beak way down the throats of the nestlings, in an apparently aimless manner, but evidently to the liking of the midgits in the nest. The rapidity of movement in the Hummer is remarkable and they could make good flycatchers were it necessary. They sometimes catch flies upon the wing and I have seen them dart at motes and specks in the air in sheer sport as the trout snaps at specks in the water from mere wantonness.

The question of food of the Hummer has been much discussed and the idea generally prevails that the Ruby-throat visits the flowers for the insects that are attracted by the honey in the flowers. This question shall be discussed in another chapter. Suffice it to say that in my opinion the Hummer makes the same use of the honey from the flowers that the Sap-sucker gets from the sap of the perforated bark.

The Flycatchers are exponents of the art of lightning dash and perform in a small way on the insects the same line of work that the Falcons follow with the birds as prey. Some, as the small Green-crested, prefer the dark woods where they are found catching the small dipterous insects, while the larger species are more open in their depredations and I have repeatedly seen the King-bird capture, dissect and devour the harvest flies. The most rangy insect that I have seen a Flycatcher capture was a dragon fly, the giant *libelula*. The insect knew its danger and sought to evade its destroyer by flying in a small circle and at a very rapid rate. The intelligent insect used excellent judgment and foiled the persistent tryant for several seconds. Round and round they went and the bird did not gain an inch on the devil's darning needle, as we boys used to call these gauze-winged insects, and I was wondering if this reasoning creature could manage to get away from its fierce enemy, when suddenly the Flycatcher dashed across the

circle nearly diametrically and caught the unlucky spindle amidships.

Kingbirds do not confine their efforts to air captures, but often plunge at a grasshopper on the ground. They also eat bees and are known as Bee Martins. I once observed a Great-crested Flycatcher eating a hornet, which it had captured from the neighborhood of a paper hornet's nest in the woods. Still I do not think that many bees are caught from the hives of the domestic bees.

It is not uncommon for the Barn-yard Phoebe to feed from the ground, while I have seen one perch for a moment on the back of a sheep, which caused me to think that this bird ate the ticks after the manner of the Cowbird. All the Flycatchers are our friends and should be protected.

The Titlark and Horned Lark feed from the ground and though they are very fair fliers and indulge in many variations in flight at times, still they are ground feeders and do not show off in the capture of their prey. The Crows are very prosaic in the capture of their prey, which in the nature of insects mainly consists of grasshoppers, which are caught upon the ground. Bobolinks and all Blackbirds feed upon ground insects and seed mainly, and like most of the singers are not interesting nor dashing in the capture of their food. Among the Sparrows we have few exponents of the art of capturing food on the wing. I have seen the Chipping Sparrow seize a small moth while flying and have observed the same proceeding in the case of a few others of the family, but all of our Sparrows are surpassed in insect capture by that interloper, the European House Sparrow, which is a most persistent feeder upon insects at certain seasons and which it catches on the wing at times with considerable skill.

MORRIS GIBBS, M. D.

(To be Continued.)

Jottings.

On May 7th Mr. John Rittenberg secured a male specimen of the Cape May Warbler, *Dendroica tigrina*, and brought the same to our office, where it still remains, for identification. This species is a very rare migrant in Orleans County.

W. Raine of Toronto spent the past collecting season in Assinaboia and has returned with photo, nest, eggs, young in down and skin of parent bird of the Little Brown Crane (*Grus canadensis*)—valuable additions to his unique series of this species.

Mr. Delos Hatch of Oakfield, Wis., an old-time naturalist and collector, writes that he has a live and pretty specimen of the White Gopher (Albino Striped Ground Squirrel).

In a letter dated July 26, from Mr. D. H. Haight, who is summering in Hamilton County, N. Y., and who had an article in the January, 1899, OÖLOGIST on "Nesting of the Duck Hawk in Hamilton County, New York." He writes:

"Remember those Duck Hawks I wrote you about once? Well, a pair has raised a brood in exactly the same place again this year. Probably the young of the pair we shot. This morning I was up on the ledge and within twenty feet of them—the old birds and four young just well able to fly. I left them undisturbed, although I could have bagged the lot. They will undoubtedly nest here next year again.

"It would be a great chance for some museum if they wanted to get up a case of this rare Hawk, also noted a Cardinal Grosbeak here. Never heard of one so far north before. Probably followed the Hudson River valley up and thus strayed up here."

In a letter of recent date Ernest Shilabeer, secretary and director general

of the Junior World's Exposition to be held at Dayton, O., in September, a more extended notice of which we give in other columns, writes:

"I enclose a slip advising you of an exposition to be held in this association Sept. 9th to 21st, inclusive. It is gotten up by boys under my supervision, and is purely educational. It will be very extensive. We have already received exhibits from Russia, Jamaica, France, New Zealand and many states. Nearly every country and state will be represented. We expect 10,000 people in the two weeks. The boys would appreciate an exhibit from you of such things as you would care to send. It should reach us by Aug. 25th, so that we can put it in the catalogue, which will be a souvenir and 10,000 issued.

Mr. Philip Laurent of Philadelphia, to whom we recently sent specimens of the Great Gray and Hawk Owls, which were obtained during the winter of '95-'96, from Red Deer River country, Alberta, and for which we could furnish no further data, writes amply, timely and tersely as follows:

"I am sorry that you can't give me a little more data concerning the two Owls. I have nothing to complain of as regards the mounting of the two specimens, although I think I could have done a little better work with the Great Gray. In my opinion, the man who collects a bird skin as rare as the Great Gray Owl or the Hawk Owl, and does not take down full data (sex by dissection, such measurements as can not be well taken from a dry skin; as well as determining the contents of the stomach, locality and date of capture) should have at least three months in jail. There are quite a few ornithologists whom it would pay to visit some of the active "field entomologists" of Philadelphia, and see with what care they label their specimens. An insect without exact locality and date of capture loses half

its value in the eyes of a Philadelphia entomologist. The ornithologist or entomologist who collects specimens without keeping at least locality and date of capture is a back number."

The booklet sent out by Mr. Silas H. Paine of the Silver Bay Hotel, Silver Bay, N. Y., mentions "three unique attractions," which ought to make Silver Bay headquarters for the naturalist and collector when in the Lake George region.

"The flora of Lake George:—Nature study is becoming very popular. No better place can be found for it than the shores of Lake George. It is wonderfully rich in wild flowers, ferns and mosses. A lady guest of the Silver Bay Hotel, arriving on the noon boat, found over fifty varieties of wild flowers that afternoon.

"A large room has been devoted to a collection of 'The flora of Lake George'—not pressed in books in the old-fashioned way—but placed in frames, like pictures, along the walls, where they can be easily examined and studied.

"The fauna of Lake George:—A whole building is devoted to a rare collection of the birds and animals to be found in this region, nearly 300 specimens, each bird with its nest and eggs and young, surrounded by the foliage in which it makes its home, and each animal in the same way—in its natural surroundings. This work has been done by a skillful naturalist and is of great interest, not only to the student, but to all lovers of birds and animals.

"The history of Lake George:—There is no spot of equal length in America that has been so many times fought over as the shores of Lake George. The relics of these old wars—arrowheads, spears, tomahawks, cannon balls, bayonets, muskets and all the paraphernalia of the camp and battlefield—are turned up by the plow, or fished up from the bottom of the lake. Two rooms have been devoted to a collection of these historical relics and the portraits of the French, English, Indian and American soldiers who have fought here.

With these collections are also gathered the books pertaining to them, so that the amateur and the student can find all the helps necessary for their use."

New Books.

THE HOME LIFE OF WILD BIRDS. A new method of the Study and Photography of Birds. By Francis H. Herrick, G. P. Putnam's Sons, New York, 4to, cloth, gilt top, 168p, with 141 illustrations from original photographs from nature by the author, \$2.50 net.

This is unquestionably one of the most valuable "Bird Books" of the year, not only for the working bird student, but will be equally prized by the amateur, the "Audubonian" and the scientific and exclusive A. O. U. man. A most happy combination: A necessity, elegant for presentation purposes, unsurpassed for the bird lover's parlor table. The market has been flooded with "bird books" and yet the publishers of this volume claim a place for it at the fore-front of such publications; it admits of no competitor: all this because of the fact that Mr. Herrick has perfected an invention that brings the birds beneath his eye, and beneath the eye of his camera, in a way hitherto unheard of. At an actual distance of about two feet from the nest, the author and his camera stand. From that point of vantage they watch and record every movement of the bird family. The domestic economy of nest life becomes a practical science, to be set down on paper by pen and picture for the practical needs of the scientist and for the delight of the lay lover of nature.

THE WOODPECKERS. By Fannie Hardy Eckstorm, Houghton, Mifflin and Company, Boston. Illustrated with five colored plates by Louis Agassiz Fuertes and 21 drawings by John L. Ridgway, square 12mo, 140p, \$1.00.

A comprehensive account of a single family of birds distributed throughout North America; accurate and orderly, yet written so as to stimulate original observation and intelligent study among young people. The author has made an exhaustive study of the structure and habits of the Woodpecker and of his tools—bill, foot, tongue, and tail—con-

cluding that he is a miner instead of a carpenter as generally supposed. The book is informing in contents and animated in style, and is certain to interest boys and girls in the study of bird life on their own account.

EVERYDAY BIRDS. Elementary Studies. By Bradford Torrey, Houghton, Mifflin and Company, Boston. Illustrated with 12 colored plates from Audubon and 2 from photographs, square 12mo, 112p, \$1.00.

"Everyday Birds" is a collection of sketches of a number of well-known birds, some biographical, and others general, in character. The volume is really an interesting bird-study book, written in a manner to interest children and older people in birds and bird-life. The illustrations include twelve colored plates from Audubon—the first considerable reproduction of the colored drawings from the "Birds" of that author. Mr. Torrey combines entire scientific accuracy with much literary charm, and readers of all ages will find it delightfully interesting.

BIRD DAY, HOW TO PREPARE FOR IT. By Charles A. Babcock, L. L. B., Silver, Burdett & Company, New York, square 12mo, cloth, 96p, 16 page illustrations of common birds, 50c.

As the author states: "The aim of this book is to assist school children in the accurate study of a few birds. It is believed that if this be attained, further study of birds will take care of itself." It contains chapters on History of the Movement of "Bird Day," The Value of Birds, The Destruction of Birds, Plan of Study, Further Suggestions, Directions for Written Work, Programs for Bird Day, The Poets and the Birds, Objects and Results of Bird Day, and Some Representative Birds, (notes, descriptions and illustrations of sixteen common species.)

TABBY'S DEFENSE. By Harriet Ell'ot, Abbey Press, New York, illustrated, cloth, 12mo, 42p, 50c.

The autobiography of a cat told in simple language with a view to enlist the sympathy of children on behalf

of dumb animals, and helping them to realize the responsibility which the human race incurred when they received the Divine commission to rule over the animal world by mercy, and not by aggression. The interest of the story is enhanced by illustrations depicting the various scenes of trial and prosperity which Tabby describes.

BOBTAIL DIXIE. By Abbie N. Smith, Abbey Press, New York. 12mo, 154p, cloth, profusely illustrated, \$1.00.

Lovers of dogs (and their name is legion) have a treat in this book. The illustrations which accompany it speak as often and as loudly as the dog himself. The pictures alone are worth more than the price. As the biography of a bow-wow, the book is of great value, while its different teachings with regard to the treatment of animals will find a place in every library and every school. The author is to be congratulated upon the production of a work which is so unique, entertaining and instructive.

CAT TALES IN VERSE. By Elliot Walker, Abbey Press, New York, 8vo, 48p, daintily bound in cloth, 50c.

The multitudinous friends (young and old) of cats will welcome in this book an absolutely new thing under the sun. Here they will find the *miaous* of their favorites set in rhyme. Owners of cats and these feline animals themselves owe the author, Mr. Elliot Walker, a unanimous vote of thanks. The verses are unique and admirably done. The cover is designed by Mr. C. H. Rowe and is very characteristic. Many of these rhymes are of a high order of merit. None of them are mere jingles. There are both wit and wisdom in the lines.

EXPOSITION COMPLETE.

Great Throngs Enjoy the Pan-American.

Ample Accommodations in Buffalo for All Who Visit the New World's Fair.

The Pan-American Exposition is complete. Its transcendent beauties and comprehensive exhibits are

viewed, enjoyed and praised by great throngs daily.

There are accommodations in Buffalo and its suburbs for all who may visit the Exposition. The rates at the hotels, boarding houses, restaurants and private houses for lodging and meals are reasonable.

These statements are made on the authority of the Exposition officials with a view of counteracting as far as possible false and misleading reports which have gained currency in certain localities.

Hundreds of thousands of fair-minded appreciative people have visited the Exposition and returned to their homes delighted with the show and their accommodations. Their words of commendation will go far toward correcting the evil. No other exposition has offered so many fine attractions. Never before has human interest been so graciously catered to. The illumination is the grandest and most inspiring spectacle ever produced by the genius of man. Bathed in incandescent radiance the Rainbow City possesses a beauty exceeding that of fairyland, a loveliness beyond expression.

By day the scene is one never to be forgotten. Unequal is the most fanciful pen to an adequate description of the magnificent architecture and beautiful coloring of the palaces, grand sculpture, cooling fountains, smiling lakes, wealth of flora, waving foliage and grass covered glades, delightful vistas, and rising high above all else—its pinnacle piercing the low-lying clouds—a tower of graceful proportions and amazing splendor, upon and about which the newest and grandest ideas of genius are fittingly exploited.

Mr. Arthur C. Pearson, the well-known publisher of newspapers and periodicals of London, Eng., who recently visited the Exposition, said: "I much enjoyed my day at the Exposition, which struck me as being very fine. The lighting effects at night are simply marvelous. I never saw anything like them, which is hardly to be wondered at as there has never been anything like them to be seen."

Here are the expressions of a number of distinguished Americans:

United States Senator Thomas C. Platt of New York: "It is wonderful, very wonderful."

Secretary of War Elihu Root: "It is a splendid exposition, worthy of being seen by the whole world."

Governor Richard Yates of Illinois: "If Paradise has anything more beautiful than the Pan-American Exposition has when illuminated, I can't conceive of it."

Passing from the enchanted courts into the splendid palaces one reads in the comprehensive exhibits the story of development and progress in the New World during the Nineteenth Century, vast discovery, stupendous invention, marvelous advancement, which constitute an example never before furnished in the revolution of time.

Buffalo is amply prepared to accommodate all who come to the Exposition. The rates are reasonable. The report that the hotels are charging \$5 to \$10 a day for single rooms is utterly absurd. These charges are for magnificent suites with extraordinary conveniences at one or two hotels. There are scores of hotels where the charges for rooms are \$1 to \$2 per day. At the mammoth hotels near the Exposition the charge for lodging, breakfast and evening dinner is but \$2 50 and \$2 a day. The charges at downtown hotels are as reasonable.

There are upwards of 200 hotels in Buffalo, with accommodations for 45,000 people. There are 650 boarding and rooming houses, accommodating 18,500. More than 10,000 householders have opened their homes and will provide accommodations for more than 100,000. The rates are 50c to \$2 per day.

In a majority of the boarding houses and at many private houses lodging and breakfast are to be had for \$1.00.

To sum up the situation, Buffalo and its environs are capable of accommodating nearly a quarter of a million visitors in a comfortable manner and at reasonable rates.

It is well when convenient for the intending visitor to make arrangements for accommodations in advance. The Pan-American Official Bureau of Information, 213 Ellicott Square, Buffalo, will furnish all necessary information, including lists of places where lodgings may be engaged, with prices, and a list of reliable rooming agencies and fraternal order's information bureaus.

There are plenty of restaurants where good service is given at reasonable prices. There are places on the Midway where a good lunch can be

had for 20 cents and a satisfactory dinner for 35 cents.

Admission to all the exhibits buildings of the Exposition is free. In this group are included the great Government, Machinery and Liberal Arts, Electricity, Fine Arts, Horticultural, Mines, Graphic Arts, Ordinance, Agricultural and Heavy Railway Exhibits Building, in which the visitor might spend with profit to himself several days. The great Stadium in which sports are held daily, is also free.

Nowhere before have so many meritorious attractions been offered for the sum of 50 cents for adults and 25 cents for children as at the Pan-American Exposition. These include, daily concerts by the best bands on the Western Hemisphere, organ recitals by the leading organists of the United States, and drills by United States Marines, U. S. Heavy Artillery, U. S. Life Saving Corps, and U. S. Hospital Corps. There are grand displays of fireworks on special days.

ELBERT L. LEWIS.

A NOVELTY!

In the way of International Expositions.
Boys Imitate Their Elders in an Interesting Enterprise.

Dayton, Ohio to be the site of a Display
of the Products of many States and
Countries.

The "Juniors" of the Dayton, Ohio, Young Men's Christian Association have inaugurated a genuine novelty in the way of Exposition propositions. The boys of all lands, and their older friends, are invited to contribute specimens of the natural products of their respective neighborhoods for exhibition at Dayton during two weeks in September.

The responses have been so generous that this Junior World's Exposition scheme has outgrown the original thought of the youthful promoters, and is becoming quite an extensive affair.

In the beginning an Exposition company was formed, the shares selling solely to members of the Dayton Junior Department, an organization of boys

from twelve to seventeen years of age, some three hundred in number. Disposing of the entire capital stock at par, the company organized with a full corps of officers and committees in the most approved fashion. Among the committees for preliminary work are the following: Care of Exhibits—Frank Congdon, Ralph Niedergall, Carl Congdon; Signs and Posters—Julius Tafel, Charlie Wilson; Photographs—Robert Pape; Decoration—Everson Welliver, George Ohmart; Correspondence—Carl Starkey, Frank Hale. This last committee is receiving much assistance from one of the local commercial colleges, whose students are furnishing many typewritten letters for the boys. Secretary Ernest Shillaber, of the Junior Department, is serving as director general.

Upon completing the organization, letters were immediately sent out to many lands, asking for grasses, leaves, shells and similar specimens easily obtainable by a boy. Unthreshed grains, crude spices, nuts and cotton balls, as gathered in forest and field, were solicited, together with miners' and other products of the under-world.

The earlier replies were so cordial, and gave promise of exhibits so far beyond the original expectation, of the lads that they have been led to seek a more representative and elaborate collection. All answers received are favorable endorsements of the idea and assurances of hearty cooperation.

The boys of Brussels wrote: "Be assured that we shall do our utmost to let our small Belgium shine in your gigantic America." An ostrich egg mounted on an orange-wood stand has already been received from the famous California farm.

The boys of the Dayton Manual Training School are preparing a beautiful piece of parquetry, consisting of specimens of every obtainable variety of wood native to Ohio. Hazelton, Pa. will exhibit a model coal bunker, showing the manner of handling a natural product. Marseilles will exhibit products of the historic Riviera. Two dozen countries and islands, together with many states of the Union, will be represented, according to the latest returns.

This first exhibition of its kind—managed by boys in the interest of

boys,—it is hoped will add definitely to the attractiveness of geographical study by the boys of Ohio, many of whom will be privileged to inspect the exhibits. Many other boys, reading of this Dayton effort, may see new interest in the study of places and products, and in distant lands will start small collections or exhibitions in their homes or schools. Practical and fascinating business lessons will be learned by the boys taking this new form of correspondence study under the tutelage of the Dayton managers. The first consideration of the original request and the weighty problems involved, the subsequent correspondence with headquarters in America, the planning necessary to give their respective States and countries creditable showing, the preparation of the exhibit, the study of packing and shipping methods, and the dealings with customs officials, will be of real value to the youngsters, who may some day participate in more ambitious international shows. Then, too, there is a hope that the successful conduct of the affair may direct attention to work for boys among those who have the world's betterment at heart.

A striking educational feature of the Exposition will be a huge map of the world, to be worked out by the Dayton lads. The spices of Ceylon, the tea of China, and the cotton of the South will be mounted on this unique map, together with the characteristic products of other States and nations. "This alone will be worth the price of admission."

The bureau of publicity is offering a series of prizes for posters in water-colors, to be submitted by pupils in the grammar grades of the public schools. These posters may be of any size, shape or design, and shall become the property of the Exposition Company, to be used in advertising the show. The posters entered in the competition will form an interesting preliminary exhibit, to be held during the early summer.

The boy managers propose loaning the World's Exposition intact for exhibition in other cities. In such cases the local Y. M. C. A. or other organized body interested in boys will be favored with the management.

Young people or others desirous of exhibiting specimens in September should address Director-General Junior World's Exposition, Dayton, Ohio, for further particulars.

THE OÖLOGIST.

A MONTHLY PUBLICATION DEVOTED TO
OOLOGY, ORNITHOLOGY AND TAXIDERMY.

VOL. XVIII. NO. 10. ALBION, N. Y., OCTOBER, 1901. WHOLE No. 181

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants," "Exchanges" "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

Strictly First-class specimens will be accepted in payment at one-third list rates.

What's Your Number?

Examine the number following your name on the wrapper of this month's OÖLOGIST. It denotes when your subscription expired or will expire.

No. 181 your subscription expires with this issue
183 " " " " Dec., "
190 " " " " June, 1902
195 " " " " Dec. "

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

IMPORTANT. This Oct. OÖLOGIST was issued Oct. 16th. The Nov. issue will be printed on Oct. 30. Copy intended for that issue must be forwarded by return mail.

WANTED:—To exchange, one guitar and case in good order, nearly new. [cash price eleven dollars] for bird skins or sea curios. G. A. DECKER, Ludington, Mich.

FOR EXCHANGE:—A collection of Alcoholic Specimens, "Scientifically named" I want arrow points, minerals shells, and U. S. Stamps not in my collection. W. J. ENGLAND, Caro, Mich.

OLD COINS, Stamps, Stamp Papers, a few fine mammal skins with skull and leg bones, etc. to exchange for bird skins and eggs. ALFRED ANDERSON, Box 59, Downs, Kan.

FOR EXCHANGE.—One brand new copy of Apgar's "Birds of U. S." (cost \$2.00) for Rowley's Taxidermy in good condition. Address, ROBT. W. GLENN, Wooster, Ohio.

TO EXCHANGE.—Complete volumes of Bird Lore, Condor, Osprey and Mineral Collector, half-dollars of 1806, 1808, 1809, 1811 and 1814, fine condition. Wanted first class sets. E. A. DOOLITTLE, Painesville, Ohio.

FOR SALE or EXCHANGE—Capen's Oology of New England, new; 100 Eastern bird skins; 25 mounted small birds; 350 back numbers Oologist, Osprey, Museum, etc.; 800 Philatelic magazines; Gray's botany; Coues Key, third edition. Will sell any of above cheap or exchange for stamps. GEO. D. FRENCH, Ivoryton, Conn.

WANTED.—For cash or exchange. Most any number of The Audubon Magazine, Birds and All Nature or The Taxidermist. Can offer various stamp and curio papers; also some singles of cheaper eggs. HOWARD E. BISHOP, Sayre, Pa.

WANTED for cash. Sets of 325, 332 and 343 or will trade. R. P. SHARPLES, West Chester, Pa

FOR SALE.—For best offer in cash. One long Seth Thomas "Grandfather" clock with a revolutionary history, confederate money and bonds. Mrs. M. F. SKEEN, Farmer, N. C.

WILL EXCHANGE fine Mexican opals for seeds or botanical specimens. Send specimens and 25 cents to pay custom house charges and I will send opal by return mail. R. BURNHAM, Box 83, Nogales, Arizona.

TO EXCHANGE.—Arrowheads and coins for eggs in sets, many common varieties wanted. Send lists. J. B. NEWTON, Unionville, Ct.

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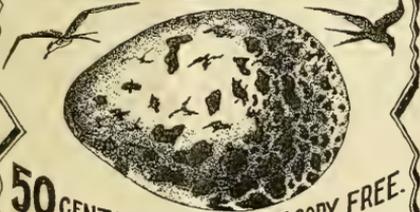
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The Food Supply of the Catbird.

By C. C. PURDUM, M. D.

The Catbird (*Galeoscoptes carolinensis*), breeds in the greater part of North America. Its range extending from the Atlantic Seaboard to British Colum-

bia, and from the British Provinces, southward to the southern boundry of the United States. It is found most plentifully in the Transition and Upper Astral Zones of the eastern United States and generally rears two broods in a season throughout the most of its range.

Although fond of the society of man, in many places it is not appreciated, and is subject to persecution, through the mistaken idea that it is a fruit stealer, as well as for its plaintive feline call. However, examinations of the contents of the stomachs of these birds, show that at least one-half of the fruit that it eats, is wild, and that fully a third of the entire food is composed of insects which are more or less detrimental to the farmers' interest, and which yearly cause heavy losses to the country. The good accomplished in this manner fully counterbalances what harm it does by appropriating a few cherries and strawberries. The reports received from observers in the central states, show that the damage done by catbirds in that locality is much greater than along the seaboard, but when we take into consideration the fact, that in the central part of the United States, wild fruits are much more scarce, than along the seaboard, the reason is perfectly apparent. This would perhaps account for the difference of opinion in regard to the usefulness of this bird, between the western and eastern observers. Experiments to establish facts in connection with the controversy, have been conducted by the U. S. Department of Agriculture, and show conclusively that catbirds prefer mulberries to strawberries and cherries, and in those localities where the latter are abun-

dant, they may easily be protected by planting the Russian Mulberry, which grows luxuriantly, in hen yards and runs, serving the double purpose of affording excellent food for the hens, and attracting the birds from the market fruit. Buckthorn, wild grape, dogwood, wild cherries, and elder, are also much sought for by the catbird and will be taken in preference to the cultivated fruit wherever it can be procured.

The catbird arrives from the South, early in May and consequently is obliged to subsist on other than ripe fruit for its vegetable diet. Until the time when the fruits ripen however, the greater part of its diet consists of insects, of which ants, May beetles, thousand legs, predaceous ground beetles, and caterpillars, form the bulk. Even at this time however, the bird will consume large quantities of last years smilax, sumach, etc. which have been exposed throughout the winter. During the greater part of June, the same, or nearly the same, conditions pertain, but as the weather becomes warmer and the vegetation increases the vegetable diet increases also. At the beginning of the season, the grasshoppers and crickets do not form a large article of consumption, but as June advances, they are consumed in great numbers. After the last week of June the number of these insects consumed is insignificant. The same is true of the May beetle consumption, which increases from the 1st to the 20th of June and then rapidly decreases.

The vegetable diet is greatly in excess after the first of July, and from the 1st to the 25th, the ratio is 4 to 1. During this time the fruit is most abundant, and the catbirds enjoy the harvest to the limit. During this time only about two per cent. of the food consists of caterpillars and beetles. In their winter homes, these birds, while probably preferring fruits and insects, are forced to make many a

meal from frozen berries and hibernating insects, which in the spring following would awaken, to lay countless numbers of eggs which would hatch into hungry and voracious larvae, capable of each day consuming more than their own weight of garden plants. The number of stomachs examined of this bird were one hundred and ninety-two, and were from specimens taken as far north as Maine and as far south as Florida, and covering a period extending from March to December. The examination has shown that of the animal food of the catbird, the beetles and ants form the principal part. Smooth caterpillars, crickets and grasshoppers are next in importance, while centipedes, thousand legs, bugs and spiders are not found in such large quantities, but nevertheless are constantly met with. The constant occurrence of thousand legs in the stomach of the catbird, leads one to suppose that they are particularly relished, but owing to their abode, living as they do for the most part under stones and other articles upon the ground, they are not so easily captured.

In this and the preceding paper, no mention has been made to the earthworms as an article of diet. As a matter of fact, earthworms form a far smaller proportion of the foods of birds than is generally supposed. Even the robin does not use as many as we are prone to believe from so frequently seeing him about ploughed ground etc. where worms are most likely to be abundant. It is a noteworthy feature, that out of the 193 stomachs examined not one contained an earthworm.

To sum up briefly then the economic status of the catbird, we may say that two-thirds of the food for the entire year is vegetable, and the remaining one-third animal. Of the former, the majority is composed of fruit, wild fruit preferred, but where the cultivated is more easily obtained or exists in

greater variety, the latter is taken to a large extent. Of the animal food, three per cent. consists of wild bees and carnivorous wasps which assist nature by carrying pollen from one plant to another, but this is counter-balanced by the destruction of the thousand legs, plant feeding bugs and weevils.

The easily procured predaceous ground beetles, are also a favorite as has been mentioned, but even the destruction of these beneficial beetles is compensated for by the number of the May beetles and their relatives which are destroyed. These added to the caterpillars, crickets, grasshoppers, leaf eating lice and click beetles, make our friend *Galeoscoptes carolinensis*, clearly beneficial to the husbandman and as such he deserves their protection and care, rather than the persecution, to which however he is all too often subjected. The next paper will deal with the gastronomic proclivities of the House Wren.

Pancreatin vs Caustic Potash.

While I dislike entering into a controversy over this matter, I believe it is due the readers of this magazine that someone should compare the properties and merits of these compounds, as a knowledge of them may be the means of saving rare and valuable specimens which might otherwise be destroyed after having been taken from the birds.

When I wrote the item "Don't Use Caustic Potash" (*Oölogist* May 1899) it was with the purpose of adding something to the technique of preparing oölogical specimens. I have used both the pancreatin and potash during my eighteen years of oölogical collecting and after a careful comparison I am more in favor of using pancreatin for removing embryos than I ever was.

Let us compare the two compounds: Caustic potash [Potassa, Potassium Hydrate] is a very powerful and active alkali, which when brought in contact with other compounds, decomposes them, extracting their water and upsetting their chemical equilibrium. When a drop of the potash solution touches the shell of a delicately tinted or spotted egg it decolorizes it wherever the solution touches. Having a decided propensity for combining with other alkalis the potash decomposes the calcium salts of which the egg shell is composed, changing them from carbonates, etc., to the hydrate and thereby rendering the shell very brittle and so disarranging and changing the composition of the egg shell, that *it is not egg shell at all but merely a compound made from egg shell*. Potash saponifies the embryonic contents of the egg and this soap is so alkaline that the whole inside of the egg shell is attacked by its corrosive and caustic properties and the shell is charred and weakened even if none of the solution touches the outside of the egg. The potash solution also attacks the skin on the hands of the operator and for that reason is disagreeable to handle.

In 1895 I took a set of eleven eggs of Blue-winged Teal which were advanced in incubation. Having no pancreatin I used caustic potash (which I had at hand) to help remove the embryos. The eggs are in my cabinet now but they are bleached on the outside and stained with dingy black on the inside, by the chemical decomposition brought about by the potash and are examples of what is claimed against the alkali.

Pancreatin is an organic ferment which digests albumenoids, converts starch into sugar, emulsifies fats and curdles milk. It is not sufficiently alkaline (or acid) to combine readily with the salts composing the egg shell, consequently does not change or decompose them. Being a ferment it di-

gests the embryo and renders it soluble in water so that it can be removed with ease. Trypsin, the main proteolytic principle of pancreatin is probably the most powerful ferment known. Students of physiology know how actively and powerfully the pancreatic juice digests all that is left after gastric digestion. (Pancreatin will digest 3000 times its weight of freshly coagulated egg albumen.)

A few weeks ago a friend in this city removed nearly fully matured embryos from a fine set of ten eggs of King Rail, in 48 hours. He used one and one-half drachms of pancreatin (15 cents worth.) He injected the solution at 6 p. m., blew out and reinjected at 6 p. m. the next day and blew out all that remained of the embryos at 6 p. m. the next day without damaging the shell in color, texture or composition in the least. The shells of these eggs were very brittle as is usual when incubation is almost completed and in my opinion, he could not have had a perfect set of eggs had he used the potash to soften the embryos.

In comparing the cost of pancreatin and caustic potash, I will admit that the digestant costs several times as much as the alkali but inasmuch as we buy these drugs only in small quantities the cost is not a matter of any great moment. We use them only when we find something rare or desirable, and to prepare such specimens in a strictly first class manner we should and most of us do, look for satisfactory results regardless of expense, especially when the expense is only a matter of a few cents.

The question of time is also a matter of but little importance to one who wants to prepare his specimens in a first class manner. The actual time consumed in removing the contents by using pancreatin is probably less than while using potash. Of course time must be given for the ferment to digest

the egg contents but that time is not necessarily wasted, as the ferment will do its work without watching or urging. The alkali solution has to be shaken about inside of the egg to obtain the best and speediest results and is slower when we reckon the actual time consumed in the preparation of the specimens.

Summing the matter up—the only point in favor of the caustic potash is its cheapness. The points against it are: it will blacken and stain the egg; it changes the nature of the shell; it renders the shell more brittle and lessens the stability of the specimens, (this being admitted by Mr. Short, in April 1899 *Oölogist*, where he states in referring to the use of caustic potash: "*This is impracticable with thin shelled eggs as it makes them too brittle to stand anything.*" You can often save large heavy shelled eggs when in the most advanced stages of incubation, etc." Another point against the potash is its attacking the skin of the operator's hands.

The points in favor of pancreatin as compared with potash are: It does not attack the shell; it does not bleach; it does not stain; *it is as useful for delicate thin shelled eggs as it is for "large heavy shelled" ones.* I have removed three-fourths incubated Chickadee's eggs in two hours, after injecting a 1:16 solution of pancreatin without injuring or staining the shells. Those who have tried to blow out incubated Chickadee's eggs know how difficult it is to do so without injuring their thin brittle shell. Pancreatin does not burn the hands of the operator wherever it touches. The only point against pancreatin is, that it costs more. It costs 10 cents per dram here in small quantities.

I trust these particulars will explain the advantages to be gained by using pancreatin in the removal of embryos and should anyone desire fuller information I will be glad to give same,

ISADOR S. TROSTLER,
Omaha, Neb.

July 24, 1901.

Some Surprises.

Eggs of our American Cuckoos have been found in the nests of other birds, but I never expected to have this fact verified by personal experience. Such was the case this spring, however. About eight feet from the ground in the main fork of a maple sapling amid the dense second growth bordering a big woods I found, on June 2d, a nest of the Wood Thrush, containing four eggs of the Thrush and one of the Black-billed Cuckoo.

Later, July 16, I met with another surprise in the heart of this big woods. It was a set of seven Redstart's eggs or rather two sets in one nest. One female was on the nest and the other close beside it. They were equally demonstrative of anxiety as I ascended the tree. The eggs were in two layers and all slightly incubated. Being of two distinct types there was no difficulty in separating them into sets of three and four. Now comes the question, are all the eggs found in a nest one set when you know they are laid by two birds? I do not consider them so. Instances of two Terns or Gallinules sharing the same nest are of almost yearly occurrence here, but it rarely happens with the land birds.

Up to this year I found the Rough-winged Swallows breeding in single pairs only, but on the 30th of last May I discovered a small colony. Their burrows were in the perpendicular face of a gravel pit and about a quarter of a mile from water. The colony consisted of eight pair together, with two pair of Bank swallows and one of English Sparrows—all within a space of thirty feet.

Perhaps the greatest surprise of the season occurred on May 9th at a Great Blue Herony, consisting of seventy-two nests and all occupied. I was high up in a large elm scooping eggs into a net attached to a long pole. Glancing into a neighboring tree I beheld a Red-tailed

Hawk upon her nest. Climbed the tree later and secured her two eggs. She had taken possession of a Heron's nest and warmly lined it with corn husks, bark fiber, moss, dead leaves and a few feathers. It was situated amid the top-most branches of an ash tree and as our tape line was only 100 feet in length, I am uncertain of the height, but judge it at 112 feet. The remaining two nests in the tree contained Heron's eggs.

For some unknown reason the Red-shouldered Hawks laid larger sets this season. Our take consisted of three sets of three, thirteen of four and one of five. Most seasons three is the usual number per set. We secured second sets from most of the above, consisting of two eggs in every case.

The Cooper's that laid four eggs last year also went one better this.

J. CLAIRE WOOD,
Detroit, Mich.

How Some Birds Capture Their Prey.

(Continued from September Number)

Of all the birds which capture their food in mid air, the Swallows are the most entertaining. To be sure, the captured insect is so small that we cannot see it as a rule, but then we may watch the graceful skimmers as they sail about the premises, and we know that at each dash from the course the flyer has benefitted the agriculturist by engulfing an insect. Blue-backed Swallows prefer insects which are to be found about the water, and generally skim the surface in their search, while the Martin flies at a greater height and at certain times almost out of sight. All of the Swallows engulf their prey after the manner of the Nighthawk and Whip-poor-will, but do not capture such large insects as these night fliers.

The Cedar Waxwing ordinarily depends upon a diet of fruit and seeds, but at certain seasons feeds largely upon insects which it catches in the air with

much of the dash of a typical Flycatcher. I have seen a Waxwing perched on the topmost bough of a tree fly up and catch a score of insects inside of a very few minutes. In these movements it somewhat resembles the actions of the Red-head Woodpecker in that it nearly always flew almost straight up and then returned to almost the identical perch; but it is more graceful as a Flycatcher than the Woodpecker.

The Great Northern Shrike and our common White-rumped Shrike are the Hawks of the hedge-row and their dash and pertinacity are equal to the actions of the larger predacious birds. A Shrike rarely, if ever, captures a bird upon the wing; at least I have never witnessed the act and I consider them slow upon the wing. But they are great at strategy and frighten their intended victims so that they fall an easy prey. I have witnessed a capture where the Shrike had chased a Sparrow into an osage orange hedge and then tried to seize the trembling creature. Each time the Shrike made a dash the Sparrow would slip through the hedge to the other side and escape for a time; but it did not dare to leave its place of comparative safety, though I doubt not that it could have escaped by straight away flight. This game of hare and hound had continued quite a time, when the Shrike's mate appeared upon the scene and made a dive at the beleaguered Vesper Sparrow on the opposite side of the hedge. Two enemies were more than the distressed and rattled bird could manage and it quickly fell a victim to the rapacious pair which had a nestful of young near at hand.

The Vireos are graceful feeders and very deliberate in their movements. They have no dash in capturing an insect and depend more on the smaller larval prey, which is picked from the leaves and twigs with a coy movement, which is amusing. Often the movements of a feeding Vireo are quite simi-

lar to those of a parrot on its perch.

All of the Warblers are given to catching their prey upon the wing at times, though most of them are mainly gleaners among the twigs and leaves, while the Water Thrushes often wade about in the shallow pools for food and the Ovenbird occasionally scratches after the manner of the Towhee. The Redstart dashes about among a flock of mosquitoes like a typical Flycatcher. I have seen the Pine Warbler dash out for an insect while it was singing in the top of a tall pine. The Hooded Warbler is another species which is expert at flycatching.

The Catbird occasionally captures an insect upon the wing as do also the Brown Thrasher and Robin, while the Swainson's, Hermit and Wilson's Thrushes are quite persistent in aerial forays, though all these birds are generally found feeding on the ground. The Robin's habit of dragging earth worms from their holes is well known and we have all watched the struggles of the captor and captive. Once I observed a Robin engaged in fishing. The spot was in the woods where a little brook swirled about the root-lined banks and made little eddies at the bends. In a shallow place the Robin was catching tiny minnows and appeared to follow the sport simply for the fun of it. There were a dozen little fish lying on the muddy edge and as I watched the fisherman twitched another minnow not over an inch and a half long from the water.

The House Wren sometimes catches an insect flying, but this species as well as all the others of the family mainly depends on hunting its food in the nooks and crevices, though the Long-billed Marsh Wren feeds from the water among the cattails and marsh debris.

The Brown Creeper is an interesting feeder and we marvel as we see the delicate creature creeping about the bark that this mite can sustain life from these

searches in the middle of winter. The Creeper generally begins its search at the base of the tree and circles upward and sometimes after reaching the higher branches will drop to the base of the trunk again. It differs, markedly, from the movements of the Nuthatch, which not rarely moves head downward in its search for insect food or seeds. I have seen the Red-bellied Nuthatch clinging to and feeding from a cone.

The Kinglets, Gnatcatchers and Titmice are pre-eminent as acrobats while searching for food, and the Black-capped Chickadee is foremost in these oddities of movement. Sometimes the Chickadee catches an insect on the wing. The Bluebird is another of our favorites, who frequently makes a flying capture, and I have seen a warbling male make a series of forays and catch an insect at every attempt.

MORRIS GIBBS, M. D.

Field Notes From Manitoba.

Continued.

THE WESTERN HORNED OWL.

Eighteen or twenty years ago I remember reading in Wilson's American Ornithology of the Virginian Horned Owl; but it was not till the year 1887 that I had the pleasure of making the personal acquaintance of *Bubo virginianus*.

The farmer with whom my first few months in this country were spent, came home one night from a few hours after the Prairie Chickens, and brought with him a fine Owl that he had shot on his way home in the dusk sitting on the top of a straw stack. I mounted it for him. It was a fine specimen of the Western Horned Owl.

Since then I have shot and handled a large number and taken both the young and eggs, having had fine opportunities to observe their habits. In this section they are fairly plentiful, frequenting the timbered country and are very par-

tial to heavy timber following the course of creeks and rivers.

In such localities almost any evening in the year while walking or driving through the woods my attention has been arrested by their call, "Hoo, Hoo, Hoo," thrice repeated, then a pause as though listening for an answer, and then repeated again till Mr. Bubo is tired or goes off to look for some dinner.

Until the spring of 1892 I had never found a nest of this species because I did not know just when or where to look for them. However, on the 1st of May, while looking for Red-tailed Hawks' nests, I chanced to see a pair of feathery tufts protruding from the top of a Red-tailed Hawk's nest. I rapped on the tree and off flew Mrs. Bubo. I climbed the tree expecting a set of Horned Owl eggs, and peeping over the edge of the nest saw three baby Owls in different stages of growth, but all apparently equally surprised and angry at my intrusion. One was feathering, one about half grown, while the third was a little downy fellow just emerged from his prison cell. I left them still manifesting their anger by a volume of hisses and bill snappings and descended to terra firma again. Two weeks after I called again to find the big fellow sitting on a branch away from the nest and the other two still in the nest. I took the two and brought them home, making them a cage of a large box and made pets of them till near the end of July, when I gave them their liberty again.

From these little captives I obtained some interesting notes, some of which I will record here. During their captivity they were quite friendly and except when fed always lived on the best of terms, but when fed they would sometimes show a disposition to quarrel over the possession of the food given to them. I fed them bodies of birds I had skinned, but they did not seem to like this kind of food, only eating it when forced

to by hunger. Mice and gophers seemed to be their favorite food and they had a great liking for snakes. When I would throw one of these into the cage they would immediately seize it, one at each end, and holding it down with their feet tear it to pieces and devour it. Rabbits seemed to be another favorite "dish," but they seemed to be lazy about this, as if I did not open the rabbit before I put it in it would remain untouched. Probably this was because the parent birds always tear to pieces the food they bring to their nestlings, and in captivity they failed to learn to provide for themselves.

During the day they would climb on to their block perches and remain very quiet, but toward dusk they became lively and noisy, spent a good deal of time trying to get out of their prison, eat any food I gave them and called to each other in a peculiar whistle, later using the same "Hoo, Hoo," that the adult *Bubo* uses in the weird hours of the night.

It was very amusing to see them fight for the possession of a snake. One seizing hold of each end they would tug and pull, flutter and struggle till the snake would come in two, and they would each take its portion to a different corner of the cage and devour it.

Well to leave the young Owls and return to the woods in the spring of '98. On the 15th of April I found another nest of *Bubo virginianus*, this time in an old Broad-winged Hawk's nest in an oak tree about 30 feet from the river bank and 35 feet high. Mrs. *Bubo* was at home and a good rap on the trunk brought her off. In this nest I found one just hatched, young one and two badly incubated eggs, all of which I left. I might here mention that the first nest recorded was in a tall oak on an overhanging branch 40 feet up on the bank of a dry ravine and about 150 yards from the river Boyne. The nest was an old Red-tailed Hawk's used the previous

season and about the 21st of May, shortly after taking the young birds, I took from this nest a set of three finely marked Red-tailed Hawk's eggs.

My third find of this species was in the latter part of April, 94. While following the Boyne river in search of Ducks I came upon it in the main fork of a giant basswood tree 45 feet up. An old and very delapidated Red-tail nest did duty for a home. No repairs had been bestowed upon it, but the large fork in which it was situated helped to make it more habitable. I could see that the nest contained young so I climbed up to investigate, leaving my coat at the foot of the tree with my gun. Just as I peered over the edge of the nest endeavoring to raise myself above it, the old bird resenting my intrusion made a dash at me, striking me in the back with her talons, which I felt through vest and two shirts. The male bird joined in the attack, but was not so bold, contenting himself with dashing past or sitting on the branch of a neighboring tree and mingling his vociferations with those of his three offspring in their hissing and bill snappings.

In the nest I found the hind quarters of two rabbits, half a garter snake, about medium size, part of a weasel, the legs and one wing of a Sora Rail and an almost entire male Ruffed Grouse.

The nest first mentioned having contained a one-third eaten Prairie Hen, part of a garter snake, an almost entire gopher and the hind quarters of a rabbit. This shows how royally these powerful birds of prey supply for their young.

C. P. FORGE,

Carman, Manitoba.

[To be continued]

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THE OÖLOGIST.

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OOLOGY, ORNITHOLOGY AND TAXIDERMV.

VOL. XVIII. NO. 11. ALBION, N. Y., NOVEMBER, 1901. WHOLE NO. 182

Wants, Exchanges, and For Sales.

Brief special announcements, "Wants," "Exchanges" "For Sales," inserted in this department for 25c per 25 words. Notices over 25 words, charged at the rate of one-half cent per each additional word. No notice inserted for less than 25c. Terms, cash with order.

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Examine the number following your name on the wrapper of this month's Oölogist. It denotes when your subscription expired or will expire.

No. 182 your subscription expires with this issue

| | | | | |
|-----|---|---|---|------------|
| 183 | " | " | " | Dec., " |
| 190 | " | " | " | June, 1902 |
| 195 | " | " | " | Dec. " |

Intermediate numbers can easily be determined. If we have you credited wrong we wish to rectify.

IMPORTANT. This Nov. Oölogist was issued Nov. 16th. The Dec. issue will be printed on Dec. 15. Copy intended for that issue must be forwarded by return mail.

FOR EXCHANGE:—First class sets with datas in full. Send your list and receive mine. Will not accept sets accompanied by lead pencil datas. JOHN P. WARD, 522.5th Ave., Lansingburgh, N. Y.

From my other adv. I received hundreds of replies and disposed of almost my entire lot of sets, etc. etc. The Oölogist is O. K. B. A. CARPENTER, Salem, N. J.

Winchester repeating shot gun, live fox, ladies gold watch, magazines, books, to exchange for bird skins, Indian relics, curios, antiques, fossils, flat snake or animal skins etc. No postals answered. STEPHEN VAN RENSELAR, West Orange, N. J.

100 choice Sea shells, 30 cents each, 5 all different old coins, 15 cts., Indian Tomahawk, 35 cts., 5 all different Indian Relics, 30 cts., 15 Curiosities, 27 cts., 250 mixed postage stamps 25 cts. My price list, U. S. Coin Catalogue and a coin 100 years old, price 10 cts. W. P. ARNOLD, Peondale, R. I.

FOR SALE.—A1 sets with data of American Osprey 1-2, 75c; Black Vulture 1-2, 49c; Arctic Tern 6 3, 19c; Roseate Tern 4-3, 22c, 2-2, 14c; Am. Crow 1-4, 10c; Wood Pewee 3-3, 19c; Am. Redstart 1-3, 18c; House Wren 1-5, 15c; Towhee 1-3, 10c; Mockingbird 1-4, 10c; Black-crowned Night Heron 1-4, 34c; Snapping Turtle 2-21, 90c. Prices are per set prepaid. One old muzzle loading rifle, \$2.00. JAS. O. JOHNSON, Southington, Conn.

WANTED:—Eggs in sets. Have to offer Vol. III, IV and V Osprey and many other odd copies of different magazines; also A No. 1 sets of eggs 1-3 677, 1-7 390, 1-3 1-4 80, 1-4 201, 1-7 475, 1-2 420 and others. Send for lists. RAY DENSMORE, Painesville, Lake Co., Ohio.

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WANTED:—Some big game heads in condition to mount, also some new skins suitable for mats. —Cash. F. M. RICHARDS, Farmington, Maine.

EXCHANGE:—Winchester take down, trap grade gun, gun case, 100 size shell case, cleaning rod and tools for best offer in sets. A. L. Ribyn, Keokuk, Iowa.

Shells to exchange for same or other specimens.—100 Goniobasis plicifera for an equal number of any species. Want books and papers on conchology. FRED H. ANDRUS, Elkton, Oregon.

FOR EXCHANGE:—Cast of prehistoric Indians' bird shaped Idol, (painted true to color) in my collection, for 35 cents worth of spear or arrow heads. HENRY O. EARHART, Mulberry, Ind.

FOR EXCHANGE:—Egg trays, size 1½x2 2x2, 2½x2½, 2x3.3x4, for eggs in sets with full data. H. C. MILLS, Unionville, Conn.

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EXCHANGE FOR CASH:—Game heads at prices lower than low, Fur Rugs, Navajo Blankets, etc. Prof. Stainsky's Natural History Establishment, Colorado Springs, Colo.

FOR EXCHANGE:—Volume Two, except No. One, of The Osprey, for best offer of eggs in sets. FRANK BRYANT, Madison Wis. Route No. 4.

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FOR EXCHANGE:—Nice sets of American Magpie, 7, 8, 9, for nice sets of common species. Will exchange for Mocking bird, Yellow-breasted Chat, Maryland Yellow throat, Oven-bird, Chestnut-sided Warbler, Parula Warbler, White-eyed Vireo, Purple Martin, Cardinal, Swamp Sparrow, Song Sparrow, Slate colored Junco, any Grackle, Baltimore Oriole, Orchard Oriole, Yellow-headed Blackbird, Bobolink, Blue Jay, Least Flycatcher, Wood Pewee, Crested Flycatcher, any Kingbird, Scissor-tailed Flycatcher, Burrowing Owl, American Sparrow Hawk, Red-shouldered, Red-tailed, or Cooper's Hawk, Killdeer, Bartramian Sandpiper Only strictly first-class sets desired. P. M. SULLOWAY, Lewistown, Mont.

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FOR SALE.—A-1 sets, with full data, of Royal Tern, 50-3, 50c; Brown Pelican, 20-3, 30c; American Oyster-catcher, 5-3, \$1; Willet, 10-4, 50c; Wilson's Plover, 5-3, 40c; Laughing Gull, 50-3, 30c; Clapper Rail, 5-8, 5-9, 5-10, 5-11, 5-12, 5c egg; Boat-tailed Grackle, 5-4, 40c; Painted Bunting, 5-4, 40c; Yellow-breasted Chat, 5-4, 20c; Black Skimmer, 10-4, 20c; postage extra. DR. M. T. CLECKLEY, Augusta, Ga.

WANTED.—Sets of eggs containing abnormal specimens, such as runts, albinos, monstrosities, abnormally colored or shaped eggs. Will give cash or good exchange. J. WARREN JACOBS, Waynesburg, Pa. 101

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In September OÖLOGIST we offered four pages of Books and Pamphlets on **Ornithology**. In the October issue we offered four pages on **Zoology, Mammalogy, Herpetology and Ichthyology**. This month we offer four more on **Marine Invertebrates, Conchology, Entomology, Botany, Geology and Mineralogy**.

In our "CLEARANCE SALE LIST" of Nov. 15th. We offered all offered in the three OÖLOGISTS mentioned and in addition three pages on **Palaeontology, Ethnology and Archaeology, Microscopy and Miscellaneous**.

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| Phainopepla, 3 eggs..... | 35 |
| Fla. Red-shouldered Hawk, 2 eggs..... | 40 |
| Rufous Hummingbird, nest and 2 eggs.... | 85 |
| Costa's " " " " " (hole in one egg, irregular)..... | 75 |
| Black-throated Loon, 2 eggs..... | 1 25 |
| Clapper Rail, 10 eggs..... | 55 |
| Western Gull, 2 eggs..... | 22 |
| Royal Tern, 2 eggs..... | 25 |
| Black Skimmer, 2 eggs..... | 10 |

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| | |
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| Long-bill Marsh Wren, 10 eggs..... | 25 |

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| | |
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| Bobolink, 5 eggs..... | 55 |
| Merlin, 4 eggs..... | 70 |
| Red-shouldered Hawk, 2 eggs..... | 35 |
| Calif. Murre, 1 egg..... | 12 |
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| Marsh Hawk..... | 08 |
| Wild Turkey..... | 20 |
| Rough legged Hawk..... | 12 |
| Broad-winged Hawk..... | 20 |
| Ferruginous Rough-leg Hawk..... | 24 |
| Am. Osprey..... | 16 |
| Long-bill Curlew..... | 18 |
| Am. Raven..... | 25 |
| Am. Woodcock..... | 20 |
| Whip-poor-will..... | 20 |
| Black-tailed Godwit..... | 15 |
| Sooty Grouse..... | 12 |
| Willet..... | 08 |
| Turkey Vulture..... | 12 |
| Ruddy Duck..... | 10 |
| Am. Golden-eye Duck..... | 08 |
| Barred Owl..... | 20 |
| Cooper's Hawk..... | 07 |
| Pileated Woodpecker..... | 16 |
| Ruffed Grouse..... | 05 |
| Black skimmer..... | 03 |
| Leconte's Sparrow (data)..... | 25 |
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THE OÖLOGIST.

A Monthly Publication Devoted to

OÖLOGY, ORNITHOLOGY AND
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The Spotted Owl.

(*Syrnium occidentale.*)

By HARRY H. DUNN, FULLERTON, CAL.

Of this owl, probably the rarest North American species of its genus, very little appears to be known. At

least, when, a year or two ago, I attempted to gather together a little information on the genus *Syrnium*, I met with very meager results, concerning this particular bird. Of its occurrence in Southern California I was then quite well assured as I had seen feathers, which I supposed belonged to this species, on the ground under trees which were evidently the nightly "hunting boxes" of some owl. But it was not until this season that I became thoroughly acquainted with this large, dark-colored bird in its summer home and as I have taken three sets of two, three and four eggs respectively, I feel warranted in inflicting myself upon such readers as I may have with a short description of bird and nesting habits.

The country round about my home, here on the north western border of Orange county, is extremely hilly and given over to small and precipitous cliffs. The hills are not what would in the east or middle west be called "well wooded," but in some of the more protected canyons a heavy growth of oak and sycamore with now and then a cottonwood may be found. On March 26th of the present year, I was making my way up one of the larger of these canyons keeping a sharp lookout for Western Red-tails and Pacific Horned Owls, which the latter frequently occupy old Hawk's nests, when my attention was drawn to an old oak stump some fifty yards up one of the sides of the canyon, by the actions of a pair of Desert Sparrow Hawks. I was morally certain that the little Hawks were not nesting at so early a date, but I had just taken two sets of Western Red-tails, each consisting of four eggs, so I was ready for any old chance that happened to come along. I clambered up

to the stump and dealt it a resounding blow with the small hatchet which I usually carry with me on such occasions. Much to my surprise a large owl came hustling out of a hole some ten feet from the ground, and flying across the canyon, settled on a dead sycamore limb, thus permitting a good view of her brown body, heavily marked with blotches and bars of a darker shade. Up to the tree I went, and peering into the hole saw some three feet down three pure white eggs on a bed of rotten wood. I returned to the bottom of the canyon and got my rifle (a 22 calibre collecting gun) and my box. When I came back the owl was still sitting where I had left her, and when I came in sight she commenced snapping her beak at me, much as does the Long-eared Owl. I noticed that her face and in fact most of her head was much lighter in color than the rest of her body, and though quite sure of the species, I shot her, and upon careful comparison with description and measurements given by various authors, I proved her to be the Spotted Owl. This bird was very near as large as the average of two female skins of the Pacific Horned Owl now in my possession, she being 20.50 inches long and having a wing length of 13.75 inches.

The eggs are much like those of the Horned Owl, only rather more glossy and a trifle smaller. In fact they are perfectly similar in all ways to those of the Barred Owl of the eastern states. These three were fresh, but dissection showed her to have laid her full complement.

At a distance this bird when in repose would pass for a Horned Owl, though in the three cases which have come to my notice, the male Spotted Owl did not appear at the nest as the male Pacific Horned usually does, nor did the female Spotted Owl make any noise whatever, save the snapping of beak, during my stay at the nest, a

trait common to the female of the Pacific Horned. I have taken sets of this latter bird from nests with the male and female sitting on a boulder not twenty feet away and "hooting" with all their lungs.

My second set, consisting of two eggs, I found in an old hollow sycamore stub, which had fallen slanting across the creek bed, and was led to its discovery, as I have been to several nests of the Pacific Horned Owl, by a tell tale feather which still clung to the rough bark of the tree. This was on the 16th day of April and was in the Santa Ana canyon about eleven miles from my home. I did not shoot this bird as she was on the nest and well seen. Incubation fresh, but as one egg had slight traces of blood, I consider it a full set. On the 18th of April, just two days later, I took my third set from a hole in a live oak about 20 feet from the ground, the eggs being laid about a foot and a half in from the entrance. The bird was on as before but also left with a few snappings of her beak when I rapped on the trunk. This was a natural cavity and had, I think been occupied by Desert Sparrow Hawks the season before. There were four eggs in this set and all were more or less incubated indicating that the bird had made a business of sitting on the eggs from the time the first was laid. No attempt at nest building was made, though the hole was very near horizontal with nothing to prevent the eggs rolling out should they once get started. The eggs were similar to the two previous sets and not so granulated or "lumpy" as type eggs of the Pacific Horned Owl usually are.

On the whole, I think from my experience this season that the Spotted Owl is about one-third as numerous during the breeding season in southern California as is the Pacific Horned Owl, of which I took nine sets this year against the three sets of the Spotted

just mentioned. Neither owl is nearly so rare as the Short-eared owl which I have found breeding but once and then with a nest full of young.

Field Notes From Manitoba.

Continued.

THE WESTERN HORNED OWL.

I did not visit this nest again, but in the spring of '95 I decided to profit by the three accidental finds I had made, and on April 1st, I took the course of the river west and as the ice had not broken up and made the best walking, I followed the river on the ice about three and one-half miles west of town. I found in a basswood tree leaning over the river an old Broad-winged Hawk's nest, from the top of which peeped two tufts of feathers, which previous experience told me were the ear tufts of Mrs. Bubo. Knowing that all was right, I climbed the tree and as I neared the nest the old bird flew off and perched on a tree near by, while I finished my climb and examined her home.

The nest was small, very little more than a foot in diameter and only just hollowed enough to keep the eggs from rolling out. It was lined with a few of Mrs. Bubo's feathers and contained but two eggs. These were in different stages of incubation. I left them in the nest to see if she would lay any more and returning a week after found the two eggs still there and Mrs. Bubo still engaged in the duties of incubation. So being sure the set was complete I took them.

From '95 to '98 I left my Horned Owls to breed in peace, when on the 24th of March I thought by way of recreation and for necessary out-door exercise I would see how they were prospering. Accordingly, taking my gun and a box well filled with cotton in my pocket, I took the course of the river east from town and after passing various unoccupied nests found in an elm close to the

bank of the river 25 feet up an old nest of the Broad-winged Hawk, from which I could see the tell-tale tufts protruding. Climbing the tree I found the nest again a very small one and contained only two eggs, which I left to see if any more would be laid. Returning a week after I found the nest as I had left it and the two eggs awaiting me, so I took them.

On the 1st of April I followed the course of the river west and in a basswood tree leaning over the river I found another nest. Mrs. Bubo was at home, as numerous feathers caught on the edge of the nest and in the nearby branches testified, and after a short climb I reached the nest, which contained the usual complement of two eggs. I left this nest for eight days, when I returned to find that Mrs. Bubo considered a family of two enough to look after and I by taking her complement of eggs put her to the trouble of resuming her household duties. This nest was about 25 feet up and quite near the place I found the nest in '95.

In '99 I tried the same route on the 29th of March without success to the east and on the 3d of April to the west for three miles, but found no nests. I however saw two Owls, one of which I shot, a fine male of *Bubo virginianus subarcticus*, which is the commonest representative of the family here.

In 1900 I again tried my luck and on April 2d in a grove of oak trees three miles east of town on the bank of a ravine I found a nest of the Red-tailed Hawk, occupied by Horned Owls. This nest was occupied last year by Red-tails and as Owls generally are not well versed in the mysteries of architecture the nest was simply flattened and two eggs rested therein. As it was late in the season and the eggs appeared pretty well advanced in incubation, I took them and after spending the balance of the afternoon in fruitless search returned home. The nest was in a tall oak 40 feet up and on a main fork plenty of

feathers in the branches and on the side of the nest, showing that the birds had often passed to and fro. All these sets and nests were those of the Western Horned Owl.

This year on March 17th I thought I would enjoy a ramble in the woods. It was a lovely day and mild, and as the snow was too deep in the woods for comfortable walking I took the course of the river and walked on the ice, which was smooth and without snow from a previous thaw. About two and one-half miles east of the town I visited a Red-tail's nest in a large oak tree, from which I had secured a set of eggs last spring, and as I clambered up the river bank I noticed Owl feathers in the branches and on the edges of the nest. As I drew closer I could see the tell-tale tufts and knew I had located Mrs. Bubo's intended nursery. As it was Sunday I did not climb, but made up my mind that I would visit this nest again, so on the 23d as the river was still frozen I hitched my horse to the cutter and drove down to see how Mrs. Bubo was prospering. Arrived at the wooded point, almost an island, well timbered with oak, elm and basswood, I left the river and following my path of last Sunday soon reached the foot of the tree. Mrs. Bubo was at home and I began the ascent. The tree was so large I could not shin it, so I climbed a small sapling and swung over till I could climb into the first fork. After this, as there were plenty of branches, I soon reached the nest. The old bird flew off as I neared it and alighting on a dead tree close by watched me.

As I peered over the edge of the nest four handsome eggs arrested my gaze, and raising myself above the nest I took notes. The nest was large, 20 inches in diameter and was in better repair than usual. The cavity also was deeper, 9 inches in diameter, just holding the four eggs nicely. Quite a lot of downy feathers were caught in the branches

near the nest and on the edge of the nest and a few of these also composed a lining.

While taking my notes the male bird came flying by and made a dash at me, and both male and female began scolding me for my intrusion, uninvited into their home, snapping their bills and hissing at me and calling to each other "Hoo, Hoo." I had a fine view of them as they sat in the tree-top close by, every few minutes making a dash at me as though to drive me from their home. The smaller size and very light color and pure white feet told me that I had, without doubt, found a nest of the Arctic Horned Owl (*Bubo virginianus arcticus*). After taking all notes and getting the height of the branch on which the nest rested, an overhanging one and 35 feet from the ground, I descended, returned to my cutter and followed the course of the river to where the bush ended, finding no more nests.

On March 29th I tried the river west and as the ice was getting pretty rotten the cutter broke through and I nearly got a cold bath. However, I saved myself by reaching out my arm and righted the cutter with only an arm wet to the elbow. On this occasion I found in a basswood tree in a Red-tail's nest, old and dilapidated, a set of two Western Horned Owl's eggs. Both were incubated and as is usual the one about a week more than the other. This nest was 25 feet up and in a tree quite close to the river bank. The nest was very flat and well adorned with the yellowish downy feathers of its occupant. I took the eggs and as the unsafe state of the ice prevented further progress returned home.

Now to sum up. These birds seen in this northern latitude are very early breeders, nesting always while the snow is on the ground, dates being from the 17th of March until 1st of April. I have never known them to construct their own nest. They always seize on the

nest of some kind of Hawk and use it for their nursery. They like to build near a ravine or river, for the reason that finding a tree whose branches overhang the river the male takes up his position there and watches until some unwary mouse, squirrel or rabbit crosses the ice, when he swoops down upon it and carries it off to his mate. They hunt chiefly at night or in the dusk of twilight, which accounts for the presence in their nests, which contain young, of such dusk-loving animals as rabbits, (northern hares) pocket gophers, mice and snakes. They take birds as they roost and the birds most frequently caught by them are ground birds as the Grouse, Rails, etc. These they catch while sleeping, as you may prove for yourself if you will go out some fine night in the spring at the time the Owls have their families to provide for, and sitting down in the shelter of the trees on the border of the woods frequented by them watch them. As twilight deepens you will hear a call "Hoo, Hoo, Hoo," then a pause and again thrice repeated the "Hoo, Hoo, Hoo." Strain your eyes and against the evening sky you see Mr. Bubo sitting motionless as a statue on some dead stump or limb of a tree or perhaps a fence post. Watch him. In a moment he leaves his perch and flaps noiselessly over the grass, keeping about three or four feet above the ground. His large wings and soft plumage carry him silently through the air and his large, well developed eyes scan the ground for his prey. Ah! see him poise. He sees some game. Hovers a moment, then drops. Run to the place and you see him rise from his quarry. He carries off with him a mouse, a rabbit or perchance a Grouse. On fine evenings in the spring I have witnessed this performance as I sat down to rest on my way home after a day's collecting.

I don't want to impress the reader that they are a very destructive bird,

for I find that it is only at the season when they are raising their brood that they destroy much game. At other times it does not take much to keep a pair of these Owls, for the two I had in captivity were not very large eaters, a full-grown rabbit lasting them for three days.

If you will open these Owls' stomachs at other seasons you will generally find that its stomach contains 95 per cent. of the remains of mice, moles, weasels, snakes, rabbits and such mammals and that few birds are taken.

We have the three varieties of the Great Horned Owl here, the two previously mentioned and the Dusky. This variety is rarer than the other two, only about three specimens having come into my hands. I have not found their nests as yet, although I feel pretty sure that they breed here. I had one brought to me in July of '94, and it appeared to be a young bird, as all the down was not off its feathers.

The Arctic is rather more common, but chiefly seen in winter. With the exception of the nest found this March I have never seen a nest. This year while on a visit to Rock and Pelican lakes I boated down the Pembina river for about seven miles between half past 4 and half past 10 on the third of July, and after passing a heronry of the Great Blue Heron in a very secluded spot at a bend of the river where the crooked course of the river almost forms a large island, I frightened from their perches on overhanging branches four young of the Arctic Horned that were well able to fly. They alighted in different places near the river, some on overhanging branches and one, the smallest of the four, on a stump. I passed within ten feet of him as he sat there staring at me with his big yellow eyes, and knew at once that I had seen a family of *B. v. arcticus*. These were all one brood, I have no doubt, as they stayed close together and had probably been hatched

in one of the old Heron's nests in the heronry before mentioned.

Well, so much for *Bubo virginianus* in his different phrases. When I again take up my pen to treat the readers of the OOLOGIST to some bird lore I will tell them something about the Loon.

C. P. FORGE,
Carman, Manitoba.

The Food Supply of the House Wren.

BY C. C. PURDUM, M. D.

One of the birds I most love is our quick motioned and cheerful little House Wren (*Troglodytes aedon*.) I meet him everywhere in the United States where I may pitch my tent, except in the mountains. In the winter, if I chance to be in the woods in Georgia, Alabama, Mississippi, or in fact any of the Southern states, he is there to greet me. If in the summer, when the heat becomes oppressive, I invade the cool and delicious solitudes of the forests of Maine, I find him always cheerful, always chirping happily to his mate on her eggs in the nest in the fence post, and always glad and happy to be in the society of man. Like our friend *G. carolinensis*, the House Wren rears two broods each season, depositing six to eight reddish brown eggs, generally in some artificially constructed shelter. Thus we find them nesting in bird boxes, unused gutters, tin cans of all sizes, which by chance are elevated somewhat above the ground, holes in the fence posts, old wood-pecker holes, and in one instance in a watering-pot which was suspended from the back porch.* Some years ago when the writer was preparing a report on "Odd and peculiar Nests and Nesting" (the completion of which was interrupted by a long period of sickness,) he received an inter-

esting note from an observer in the West † as follows: "The day before yesterday I took a set of seven eggs of the House Wren. I have taken many sets of these eggs before, but the peculiar situation of the nest, etc., warranted I think, taking it. An old rubber boot had been cut down to the ankle and the foot used as a shoe by one of the farmers about here, and had afterwards been discarded in the field. In clearing up the field the next Spring preparatory to planting, the improvised shoe had been thrown carelessly into a brush heap at the edge of the field, and remained there. The birds took possession of this and filled it with sticks and then built a nest, thus making for themselves a very substantial abode. The nest and it's encasing of boot foot, make a very interesting addition to my collection." In most localities, this bit of perpetual motion is respected by the farmer, and his worth fully appreciated. Hunting with the minutest care, but with marvelous agility, the Wrens skip hither and thither along the fences, about the brush heaps, in and out among the stones of the loosely constructed walls of the pastures, through the orchards, and about the out buildings, searching with their little piercing eyes, every crevice, nook, and cranny, for food for their youngsters and themselves, and altogether make one of the most useful, and certainly the least expensive of the farmer's assistants. The report of the U. S. Dep't. of Agriculture, on this bird, gives the results of the examination of fifty two stomachs, taken from a range extending from Connecticut to California.

Ninety-eight of the stomach contents was composed of insects, while the remaining two per cent. was composed of rubbish, like bits of grass, wood, and sand, which was in all probability taken by accident. No vegetable food could be said to have been taken intentionally, was found in any one of these

*Report on the House Wren, U. S. Dep't. of Agriculture, 1895.

†Mr. Roy G. Fitch, since deceased.

stomachs, and none was expected, for I do not know of one observer who has taken the trouble to closely follow the habits of these birds, who has been guilty of charging them with even an occasional departure from an insect diet.

Nearly one-half of the insects consumed are grass-hoppers and beetles, and the other half is about equally divided among the bugs, spiders and caterpillars. Among the beetles, the ground varieties form about six per cent., and the weevils rank next in importance. Indeed during July they approach eleven per cent. Only about half as many dung beetles are consumed, as weevils are not eaten at all after May, when these beetles are of most value from an economic standpoint. Among the other varieties, which were found in only small quantities or occasionally, may be mentioned, beetles of the firefly group, leaf beetles, click and rove beetles.

"One bird had eaten a longicorn beetle." From the examination above spoken of it was found that during the month of August, the grass-hoppers reached a maximum of sixty per cent., to the exclusion of some of the heretofore most common kinds of insects. Of this sixty per cent. the common and green grass-hoppers and insects formed the bulk, and as the bird continues to eat insects after the fruit ripens we can not but make a most favorable comparison between it and the bird of our last paper, *Galeoscoptes carolinensis*. Among the bugs consumed by the House Wren are many of the plant feeding and leaf hopping varieties.

The stink bug (*Pentatomidae*) is also consumed in large numbers. Plant lice are occasionally eaten. The large number of daddy-long-legs which this bird devours, is however, from a strictly economic standpoint, somewhat detrimental, as they are known to feed upon aphids. Very few flies were

found in the stomachs, showing no doubt to the fact that these insects are more difficult to capture than the others. But few wasps were found.

In conclusion I can do no better than to quote "verbatim," from the excellent paper of Mr. Sylvester D. Judd, Assistant Ornithologist to the Department of Agriculture.

"From the foregoing detailed account of the Wren's food, it is obvious that the bird is very beneficial to agriculture. Such insectivorous birds should be encouraged. It is a pity that the quarrelsome English sparrow can not be exterminated, for if in the place of every dozen English Sparrows, there was one House Wren, our churches would present a more sightly appearance, while the yield of the crops of the country would be greatly increased. At Cambridge, Mass., the sparrow has driven the Wren away by occupying the nesting boxes. This is true to a certain extent wherever the two birds have met. To secure the services of the wren, the farmer must put up nesting boxes and declare war on the sparrow."

TABLE SHOWING NUMBER OF STOMACHS AND PER CENT. OF FOOD:

| | |
|-----------------------------------|-----------|
| Number of stomachs examined..... | 52 |
| Per cent. of animal food. | |
| Ants..... | 4 |
| Caterpillars..... | 16 |
| Beetles..... | 22 |
| Grasshoppers..... | 25 |
| Bugs..... | 12 |
| Spiders, Thousand-legs, etc..... | 14 |
| Miscellaneous..... | 5 |
| Total animal food..... | 98 |
| Miscellaneous vegetable food..... | 2 |
| | Total 100 |

Nesting of the Coppery-tailed Trogon.

One of my collectors has recently sent me several sets of eggs of the Coppery-tailed Trogon, and as they are quite rare I thought your readers might be interested in his letter describing the tak-

ing of a set of them. They were taken on July 24 of this year. He writes:

"We left Sinaloa, Mexico, at 5 a. m. on the 23d of July. The pack mules were started, but it had taken so long to get them off that we decided to take lunch before leaving. After lunch we went down to the river and were ferried across, while the mules were required to swim. Our afternoon ride was a pleasant one and we enjoyed it hugely. It was through a rather low growth of all sorts of strange trees. There were giant cacti of various kinds, several varieties of prickly pear and many climbing vines. At frequent intervals we came to native dwellings, as poor as they could be to be called shelters, the sides made of brush and the top thatched with palm leaves.

"I never elsewhere saw so many tarantulas. Their holes lined the sides of the road, and occasionally one would stick his front feet out as we went by. Before night came on our mules showed signs of fatigue, though we had traveled slowly. Toward evening we struck the first creek of any importance, by the side of which the natives were starting to cultivate corn. The temperature was about the same as that in a moist hot house. It was just as the sun was setting that we rode into a little village of thatched houses. We put our cots under a shed and tried to get some sleep, but it was rather a failure, for the burros kept up a braying to each other throughout the entire night. I put in only about an hour's sleep for the night.

"Our mozos was up at 4 a.m. and fed the mules, and by 6:30 we were off on the road. It was like a moist hot house all morning. The trail was a pretty one, winding beside an arroyo with large trees and very dense foliage all around. Here and there we would pass patches of bananas, mangoes and sugar cane, with a little thatched cottage in the grove generally shaded by an orange tree. As we were riding along a stony

bit of trail, always on the lookout for curios, my eyes caught sight of a bird which interested me. There are lots of large green and blue parrots to be seen along the trail, and another bird of brilliant red, green, black and white plumage. I saw one of the latter disappear behind a stump, and on riding up to it she flew out of a hole in the stump. I looked in the cavity and found her nest of eggs. I did not see how she got in there, for her tail was as long as the hole was deep. I think she must have left it at the entrance and put it on again when she went out. My old spirit of collecting birds' eggs got the better of me, and out the eggs had to come. They were fresh, and I blew them and put them back in the nest, covered them with leaves, sticks and stones and left them until my return trip some weeks later."

The native name of this bird is Coa or Cola, but the A. O. U. knows it as the Coppery-tailed Trogon.

The eggs are pure white, about as dull in color as a pigeon egg, and either two or four in number.

R. P. SHARPLES,
West Chester, Pa.

Mr. Richard C. McGregor of the U. S. S. "Pathfinder" under date of August 16th, in Dutch Harbor, Alaska, writes: "I have some little time for birds, etc., here. Have put up plenty of skins of Aleutian Leucosticte, Sandwich Sparrow and Aleutian Song Sparrow besides a few other species. Have eggs of Nelson's Ptarmigan, Fork-tailed Petrel, Sandwich Sparrow, Green-winged Teal and some common things.

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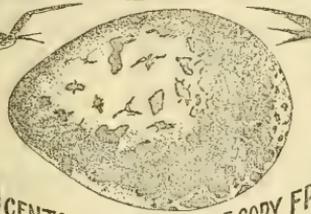
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Warblers Found Breeding in Livermore Maine.

BLACK AND WHITE WARBLER (*Mniotilta varia*.) Breeds, but its nests are very hard to find. I think it is not

an uncommon breeder in this locality, and is found quite abundant during migration. Earliest nest found May 25th, latest June 9th. Eggs 3 to 5 in number, color white, spotted in the form of a wreath around the large end with hazel, lilac, chestnut etc. Nest composed of leaves, bark, pine needles, grasses, lined with horse hair, and hair like roots.

NASHVILLE WARBLER (*Helminthophila ruficapilla*.) Fairly common breeder in this locality. Its nest is well concealed and very hard to find unless the bird is flushed from it. Earliest nest found May 31st, latest July 5th. Eggs 3 to 5 in number. Color white, spotted over the entire surface with lilac, chestnut etc. Nest composed of grasses, moss, pine needles and hair, and sunk deep in the ground so that the top of the nest is level with the surface.

NORTHERN PARULA WARBLER (*Compsolhlypis americana usnea*) Breeds, and no doubt quite abundantly in this locality where trees are found that are laden with the long gray moss the usnea of the botanist, that is found in such abundance throughout the forests of Maine, but I have never found its nest until this season. They were built in woods near stagnant pools of water at a height of from 20 to 30 feet from the ground. Earliest nest found July 9th, latest July 22d. Eggs 3 to 5 in number. Color white, speckled with brown, chestnut, grayish etc. Nest composed of the usnea moss. The usnea moss in which one nest of this species is built and which is in my collection, measured 33 inches in length. It was in a dead spruce, and is a beautiful nest.

YELLOW WARBLER (*Dendroica aestiva*.) Fairly common here, but not so abundant a breeder in this town as in other localities near by. Breeds very abundantly at Dead River and Androscoggin Lake in the towns of Leeds and Wayne, Me. See THE OÖLOGIST, Feb., 1900, pages 26, 27 and 28.

Master Harold W. Philoon found a beautiful nest of this species containing four eggs, built in a pear tree at his home in Livermore this past season.

Nests early in June in this locality. Eggs three to five in number; color, greenish or bluish white, spotted with black lilac and brownish, thickest at the large end in the form of a wreath.

The nest is very finely made and is composed of plant stems, fine fibers and grasses, and lined with soft plant down and some times a few feathers. I have never found them built over ten feet from the ground, seldom more than two or three, although I have found a large number of them.

BLACK-THROATED BLUE WARBLER (*Dendroica caerulescens*.) I consider this species a very rare breeder in this locality and have only one record of its nesting in this town June 12, 1893. A nest containing four slightly incubated eggs, placed in a low bush about eighteen inches from the ground, and composed of nearly the same material as described for this species in Davies' Nests and Eggs of N. A. Birds, 4th edition.

The color of the eggs is a greenish white, very heavily blotched with reddish brown chestnut and hazel nearly covering the entire surface at the large end; a very beautiful set of eggs.

MYRTLE WARBLER (*Dendroica coronata*.) This Warbler although not an abundant breeder in this locality is not rare here by any means, and I think is far more plentiful than one would suppose. I consider this species a common summer resident and is found breeding in coniferous growths of small pines at a height of from five to fifteen feet from

the ground. Earliest nest found May 23d, latest June 15th.

Eggs four or five in number; color, white, spotted with reddish brown and blotched with large patches of lilac, mostly around the large end in the form of a wreath.

The nest is composed of fine twigs of the hemlock and fir and fibers, and a few dead grasses, and lined first with soft grasses and lastly with a warm bed of feathers from the Canadian Ruffed Grouse (*Bonasa umbellus togata*.)

MAGNOLIA WARBLER (*Dendroica maculosa*.) Very common breeder in this locality. Have found many nests of this species built in confirious growths of pine, hemlock, fir and spruce at a height of from two to ten feet from the ground.

Earliest nest found June 5th, latest July 5th.

Eggs three to five in number; color, white, spotted, speckled and blotched with brown hazel black and chestnut in some nearly all at the large end, in others over the entire surface.

Nest composed of fine twigs and grasses and lined with fine black hair like roots; it is made very flat and is very loosely constructed.

CHESTNUT-SIDED WARBLER (*Dendroica pennsylvanica*.) Abundant throughout its range and a very common breeder in this locality.

Its nest is commonly found built in low bushes seldom more than two feet from the ground in old bushy pastures.

Earliest nest found June 3d, latest June 27th.

Eggs three or four in number; color, white, spotted with brown, chestnut, lilac and sometimes dots of blackish.

Nest composed of bark, dead grasses, weed stalks, plant down, etc.; lined with fine grasses and horse hair, and is generally loosely constructed, although this is not always the case, for I have found them finely made.

BLACKBURNIAN WARBLER (*Dendroica*

blackburnia.) I consider this a very rare breeder in this locality, but is fairly common during migration. I have never found its nest, but have taken their young just out of the nest, and have observed them feeding their young in the tree tops in a woods of pine, cedar and fir.

This past season the date at which I took the young was July 29th. No doubt fresh eggs could be obtained in the latter part of June in this locality. Next season I hope to record a nest and eggs of this species from Livermore.

BLACK-THROATED GREEN WARBLER (*Dendroica virens*.) Common summer resident and no doubt a common breeder in this locality, although I have found but few nests.

Earliest nest found June 8th, latest June 26th.

Eggs three or four in number; color, white, with a wreath around the large end of rufous lilac, chestnut and brownish spots, although some are spotted over their entire surface.

Nest is composed of bark strips, dead grasses, hair and sometimes feathers; lined with fine down and hair, and all that I have seen were built from five to fifteen feet from the ground.

PINE WARBLER (*Dendroica vigorsii*.) I think this species is a common summer resident in Livermore, although very few nests are found and I do not think it is found breeding very abundant in any part of the state.

I have had the good luck to find two nests, each containing four eggs, one June 14th, the other July 6th, both built in small pine in thick coniferous woods, one about fifteen feet up and the other only six or seven feet from the ground.

Eggs white or grayish white, spotted and blotched with brownish lilac and blackish in the form of a wreath around the large end, the rest of the egg sparingly marked.

The nests are composed of fine strips of bark from the birch and grapevine,

find dead grasses and a few fine twigs, and are deeply hollowed and lined with fine dead grasses, hair and hair like roots, and warm mosses, and are very thick and warmly made.

OVEN-BIRD (*Seiurus aurocapillus*.) A common breeder in this locality. I have found many nests of this species and I do not consider them hard to find.

The most beautiful nest and eggs of this bird that I have ever seen was one that I found in the month of June, 1898, in the town of Leeds, Me., near the Androscoggin Lake, that I have mentioned in THE OÖLOGIST, Feb. issue, 1900, page 26.

Well do I remember that night, for it was after the day had past and the sun had gone down below the western hills, and night was coming on. With my naturalist friend, Mr. J. E. Teague, of Livermore, who has been my companion on many a camping expedition, I was climbing a hill to view a cavern far up the hillside among the ledges. Everything was silent, not a breath stirred the leaves of the giants of the forest, and from the hilltop we could look out over the silent waters of beautiful Androscoggin Lake, dotted with its many islands, its waters glistening like silver under the rays of the rising moon. That one could always go through life as calm and peaceful as this. A scene like this brings one nearer to his Creator and fills him with more noble purposes. It seemed as though I was looking into another world as we stood looking out on to this grand sight.

The silence was broken from a clump of bushes near by. There came to us the mournful notes of the Whip-poor-will, then from the deep dark forest the hoot of an Owl was heard, then silence; then from far out on the lake came the mournful screams of a pair of Loons that were nesting there, then silence again. Night had come and all nature was at rest.

We turned to retrace our steps back to camp, when, from the leaves at my feet, there ran a little bird with the actions of a mouse, and looking down, we beheld the beautiful home of the Golden-crowned Thrush, built among the grand old hills of northern Maine.

This species nests in this locality in June. I have never found it nesting in any other month of the year.

The eggs are four or five in number, usually five, and are too well known to need any description, as is also the nest.

MARYLAND YELLOW-THROAT (*Geothlypis trichas*) Common breeder in this locality. Have found many nests built in bunches of grass or low bushes, and sometimes on the ground at the foot of a tussock of grass near or in swampy localities.

The nest is very hard to find by watching the birds carrying nesting material, and nearly all that I have found was by flushing the bird from the nest, which is very large and bulky for so small a bird.

Earliest nest found June 6th, latest June 28th.

Eggs three to five in number; color, white, spotted and lined with brown and black mostly at the large end, although the rest of the egg is not unspotted.

The nest is composed of dead leaves and coarse grasses and lined with fine dead grasses and horse hair.

CANADIAN WARBLER (*Wilsonia pusilla*.) Rare breeder in this locality. Have never found its nest. July 10th found two pairs of these Warblers feeding their young. It was in a low swampy woods of fir, spruce and ash. The young were hardly able to fly and were easily caught and positively identified. Next season I intend to find a nest of this Warbler if careful search will reveal it.

AMERICAN REDSTART (*Setophaga ruticilla*.) Abundant breeder and a beautiful bird and with tail spread like a fan

they flit from tree top to tree top, reminding one of a huge butterfly in all the brilliant colors of the rainbow. The Redstart delights to nest in woods of deep green foliage near running streams.

Earliest nest found June 1st, latest June 25th.

Eggs three or four in number; color, white or greenish white, spotted with brown and lilac over the entire surface, thickest at the large end.

Nest composed of fine fibers and bark strips and spider webs; lined with grasses and horse hair. Built from five to fifteen feet above the ground.

In closing this paper I would say that I consider the Warblers the most interesting family of birds for the ornithologist to study, and in giving the description of the nests and eggs in this paper, I have described specimens that are in my own collection, and while it may differ from the descriptions given by others, it is correct in regard to the specimen that I have examined.

Hoping that more attention will be given to the study and less to the destruction of our feathered friends, I remain oologically and ornithologically,

GUY H. BRIGGS,
Livermore, Maine.

The Accipiter Cooperini in Wayne and Oakland Counties, Michigan. *

Cooper's Hawk is a common summer resident in both Wayne and Oakland counties, being exceeded in abundance only by the Red-shouldered (*Buteo borealis*.) It is well known to the farmers as the "chicken-hawk," and most farmer boys pride themselves upon the number they have killed. It is the most dashing and spirited of our summer hawks becoming, however, like most other hawks, commonest in August and September. Undoubtedly more than 80 per cent of the depreda-

tions committed upon domestic poultry may be attributed to it. Bendire says: "Cooper's Hawk must be considered as one of the few really injurious Raptors found within our limits, and as it is fairly common at all seasons through the United States, it does in the aggregate far more harm than all other hawks. It is well known to be the most audacious robber the farmer has to contend with in the protection of his poultry, and is equal in every way both in spirit and dash, as well as blood-thirstiness, of its larger relative, the Goshawk, lacking, however, the strength of the latter, owing to its much smaller size. It is far the worst enemy of all the smaller game birds, living to a great extent on them as well as on smaller birds generally. It does not appear to be especially fond of the smaller rodents. These as well as reptiles, batrachians, and insects seem to enter only to a limited extent into its daily bill of fare, and unfortunately it is only too often the case that many of our harmless and really beneficial hawks have to suffer from the depredations of these daring thieves." However, this has always been the most interesting of hawks to me, perhaps because the first I ever shot. To relate the story: It was late in the afternoon on a September day. A friend and myself were returning from a collecting trip rather disappointed with our day's "catch," when we noticed a hawk sailing through the air. Suddenly he seemed to drop into an apple tree at the end of a long field. We crept to within gun range, when he suddenly sailed from the tree. I fired bringing him to the ground. When we got up to him he turned over on his back and showed signs of fight. Not knowing the strength of a wounded hawk, I went to pick him up, when at the same time he took a gentle hold on my hand, and would not let go until we killed him.

Mr. J. Claire Wood speaks of a female Cooper's Hawk in his collection which was taken in Greenfield Tp., Wayne County. The bird had dashed through the laths of a hen coop in pursuit of some small chickens, and was caught by the farmer before it could escape. It was very poor in flesh, and its stomach was empty, which probably explains its daring ferocity. Mr. Wood also records the following sets of eggs of the Cooper's Hawk taken by him.

"May 6, 1900. Nest situated about 45 feet from the ground in the main fork of a slanting beech, in higher portion of a thick woods in Van Buren Tp., Wayne County. This nest contained four eggs.

"May 5, 1901. From same pair of birds, nest also 45 feet from the ground in fork of young beech, the trunk of which was not more than nine inches in diameter. This nest was not more than 100 feet from tree containing old one. The old bird was not at home, but put in her appearance as I ascended the tree, and was very demonstrative, sweeping down within a few feet of my head. Was induced to climb by noticing bits of down clinging to nest and surrounding limbs, which is invariably the case, I believe, when incubation has commenced. This nest contained five eggs somewhat incubated.

"May 11, 1900. Rather open oak woods bordering railroad track, Clarkston, Mich. The continued persistent cries of this bird induced me to look for the nest. There was a great many old crow nests in the woods and I climbed to several before discovering the one containing the eggs, which were five in number, and very slightly incubated.

"The most remarkable part of this take was the fact that while it rained steadily all day, the hawk had not been on the nest for some hours, for the nest was soaking wet, and the eggs cold, nevertheless, she was very solicitous over the welfare of her home."

It has been stated that a visit to the nest of a Cooper's Hawk would cause the parents to abandon it, however, I am inclined to differ judging from a pair I had an acquaintance with last spring. On April 21st, while out collecting birds, we met a farmer of whom we inquired if he had seen any hawk nests. He replied in the affirmative, and said that a pair of "duck hawk" had taken up their abode in a nearby woods, pointing out about where he supposed it was. He said that but a couple of days before, he had passed the tree, and that the old ones flew around, saying some very inpolite words (in hawk). We made directly for the spot, and found the nest in the crotch of a beech tree 33 feet from the ground, but the tree was too hard to climb. On April 25th, we returned with irons, and climbed to the nest. It contained one egg which was cold and dirty, and as no birds were around I concluded that it was the egg of a Red-shouldered hawk which had deserted the nest on account of the farmers interrupting it. However, I took the egg home and upon washing it, found it was the egg of a Cooper's hawk. I blew it and found it fresh. On April 28th, I again visited the nest on which the old female was sitting, but she flew in response to a tap on the trunk of the tree. There was one egg in the nest, which I took and replaced it with that of a chicken. May 5th, I returned to the nest and found two more fresh eggs beside that of the hen. I took these eggs home leaving one more hen's egg in the nest. On May 19th, I returned to find one more hawk's egg, it was highly incubated.

You will probably be interested to know what became of the chicken eggs. What would the poor hawk do if after setting three weeks, find that she had only raised—her breakfast, but this could not be, as the eggs were hard boiled intended for my lunch, and upon my last visit, I threw them from the nest.

ALEX. W. BLAIN, JR.

* Read before Chapter 176 Detroit B. Agassiz Association. Oct. 4, 1901.

The Food Supply of the Brown Thrasher and Mocking Bird.

BY C. C. PURDUM, M. D.

THE BROWN THRASHER:—This bird is found most plentiful in the Carolinian zone of the U. S., but is found breeding from New England to the Dakotas. Like the birds which we have last considered, this bird rears two broods in one season. Being more retiring in its habits than the catbird, one would naturally look to find the thrasher less destructive than the latter. As a matter of fact it is, but there is no great difference in the varieties of cultivated fruit which it devours, although the quantity is much less.

Perhaps the variety of food taken by this bird from the garden is greater than any heretofore considered by us, consisting as it does of a rather diversified list of fruit, viz., peaches, plums, apples, pears, strawberries, black and red raspberries, grapes and cherries; all of which are marketable and a great source of income to the farmer. Naturally therefore the fruit grower, observing these birds feeding in his trees and shrubs, looks upon them with no favorable eye, and contemplates their destruction as a thing to be desired. He should, however, look farther than the loss of a few fine cherries or grapes, and observe the bird closely, when he would find that for each peck at a grape or any of the other fruit, the bird will eat a dozen or more noxious insects, taking them as the body of the meal and the fruit as a side dish.

This paper on the food supply of the Brown Thrasher, is based upon the report of the examination of one hundred and twenty-one stomachs, collected as far west as Kansas and covering a range from Florida to Maine. This investigation was conducted by the U. S. Department of Agriculture during the years of 1893 and 1894, and the result may be roughly estimated as follows:

Animal matter, 63 per cent.

Vegetable matter, 35 per cent.

Mineral matter, 2 per cent.

Of the animal food, beetles are by far the most relished, forming nearly one-half of the whole amount. Next are the grasshoppers and crickets (Orthoptera), forming about one-fifth of the animal food consumed. Then comes the caterpillars, forming somewhat less than one-fifth, and then the spiders, thousand legs and bugs, forming the remaining one tenth.

Only eight per cent. of the beetles consumed are among the beneficial predacious ground varieties, and by the consumption of a great volume of crickets, caterpillars, weevils, click and leaf beetles, a ratio is established, decidedly in favor of the Thrasher.

Before rendering a complete verdict on the Thrasher, we must follow his food supply through the entire season. In the case of the Wren we found this bird subsisting on an animal diet almost entirely throughout the entire season. With the Thrasher it is different; he changes his diet with the ripening of the fruit, and as he eats more fruit he takes a smaller number of insects, and vice versa. For instance: Early in April when the Thrasher first arrives from the South, animal food is much more plentiful and the Thrasher consumes at least, three times as much animal food as vegetable, and as the insects are very plentiful even before the vegetable food is ripe, the excess of animal food continues and increases until about the latter part of May it reaches a maximum of 7 to 1.

When the vegetable element begins to ripen, the proportion of animal food to fruit begins to lessen, and about the middle of August to the first of September, the ratio changes gradually until it stands inversely 2 to 1. At no time however does the proportion exceed this two to one ratio, leaving quite a heavy balance to the end of the season on the side of the animal food.

Notwithstanding the fact that the maximum of fruit consumed, is reached in July, we find that a large number of beetles and ants are also devoured during this month.

After the 20th of June the caterpillars which have been very largely consumed up to this time, begin to fall off in numbers, and their place to be taken by mulberries, buckthorn, etc., and while a few are found in the stomach constantly, still after the above date they fail to increase to any marked degree during the remainder of the season.

The above looks somewhat dark to the value of the Thrasher economically, but after all, out of the general proportions of 25 per cent. of vegetable food, we find that only 11 per cent. of it is cultivated, and of this, eight per cent. is fruit and the rest grain.

Mr. Sylvester D. Judd of the Department of Agriculture, says of this bird, "The economic relation of the Brown Thrasher to agriculture may be summed up as follows: Two thirds of the birds food is animal, the most of the vegetable food is fruit, but the quantity taken from cultivated crops is offset by three times that quantity of insect pests. In destroying insects, the Thrasher is helping to keep in check organisms, the undue increase of which disturbs the balance of nature and threatens our welfare. A good example of the result of such irregular increase is to be had in the fluctuations of the Rocky Mountain locust.

The Brown Thrasher in its present numbers is a useful bird, and should be strenuously protected from gunners and nest plundering boys."

THE MOCKING BIRD (*Mimus polyglottos*):—The amount of data regarding the food supply of this bird is small, and although its range is large, and in many localities, especially in Texas, the bird occurs in great numbers, the investigations—what few have been made

—have not been carried out systematically. What has been determined can be stated concisely as follows:

The animal food is much less in quantity than the vegetable, and consists entirely of insects and spiders. The insects include grasshoppers, caterpillars, beetles and ants, while the vegetable food is composed of the pulp of the larger fruits, as pears, plums, apples, etc., together with large quantities of the seeds of berries of the smilax, sumac, mulberry, bayberry, pokeberry, black alder, red cedar Virginia creeper and poison ivy.

The writer will be pleased to receive either authentic notes on the contents of the stomachs of birds shot, or established facts in regard to the food supply of this bird, and will later embody them in a report, if sufficient data can be procured to prepare an article of value. The concluding paper will deal with the Meadow Lark (*Sturnella magna*.)

An Example of Maternal Solicitude

Many are the stories told in prose and sung in rhyme of maternal devotion among animals and birds. So strongly is the maternal instinct developed that it leads to acts of sublime heroism that challenge the admiration of the world. Then it has its amusing side, as when a brooding hen will patiently incubate a china door knob without one ray of suspicion of the hoax being played upon her.

An example of sublime, though ridiculous devotion came under my ken last summer which may be worth recounting. I made a professional visit to one of our distant mining camps, high up in the mountains. After my patient's wants were ministered to, the Superintendent, who knew of my propensity for robbing birds nests, called one of the men and requested him to

lead me to the nest of a Humming B'rd that had been discovered a few days previously. The path led us up the steep mountain-side about one-half mile, through the dense white fir and alder thicket. The nest was saddled upon the body of a small fir, about four feet from the ground. I was delighted to find the bird at home and ready for callers. She was a Calliope (*Trochilus Calliope*) one of the rarer species with us, and as my guide remarked that she had been upon the nest three days previously, I felt sure that a fine set of eggs would shortly be added to my cabinet. I gently shook the bush with the intention of causing her to vacate. Not any vacate there. On the contrary, she settled down into the nest with a sort of fight-it-out-on-this-line-if-it-takes-all-summer air that was highly amusing. I then gently lifted her up by the beak despite her scoldings. She dug her feet into the lining of the nest in such a manner that I feared to break the eggs which I could not see, so was obliged to desist. Reversing the plan of battle, I lifted her by the very brief condal appendage projecting above the rim of the nest. This was too much of an indignity for even an outraged hummer, so with an angry buzz she took wing and perched upon a tree not many yards away. I looked down at my treasures and no treasures were there. Not an egg. A pretty little nest of black moss and tree down but nothing that would in the future add to the bird population of Idaho. Maybe some of your readers can tell me what that bird had in her mind. If so, I will gladly furnish stamps for I very much desire to know. Yours oologically,

CHAS. S. MOODY.

Orofino, Idaho.

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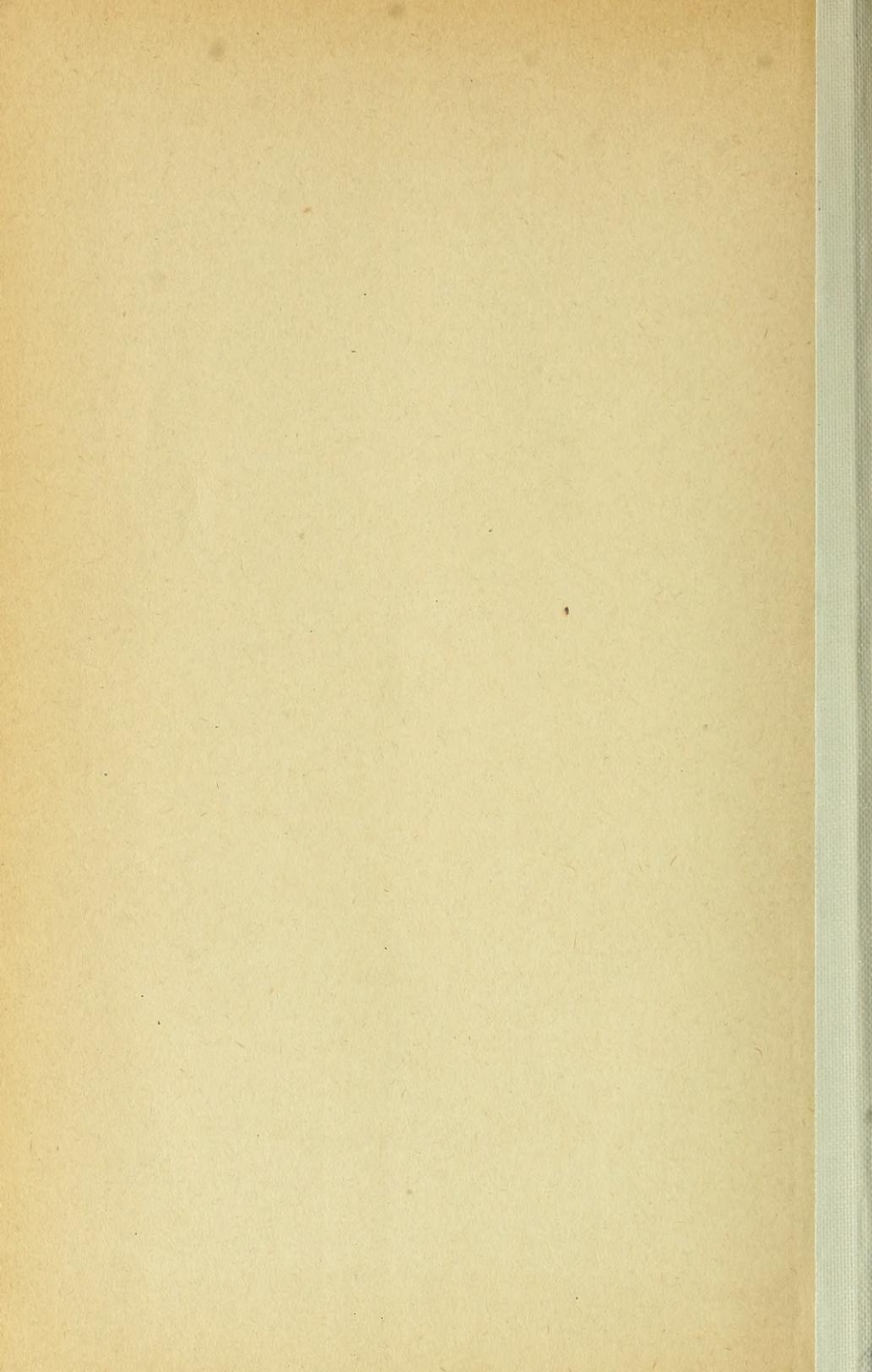
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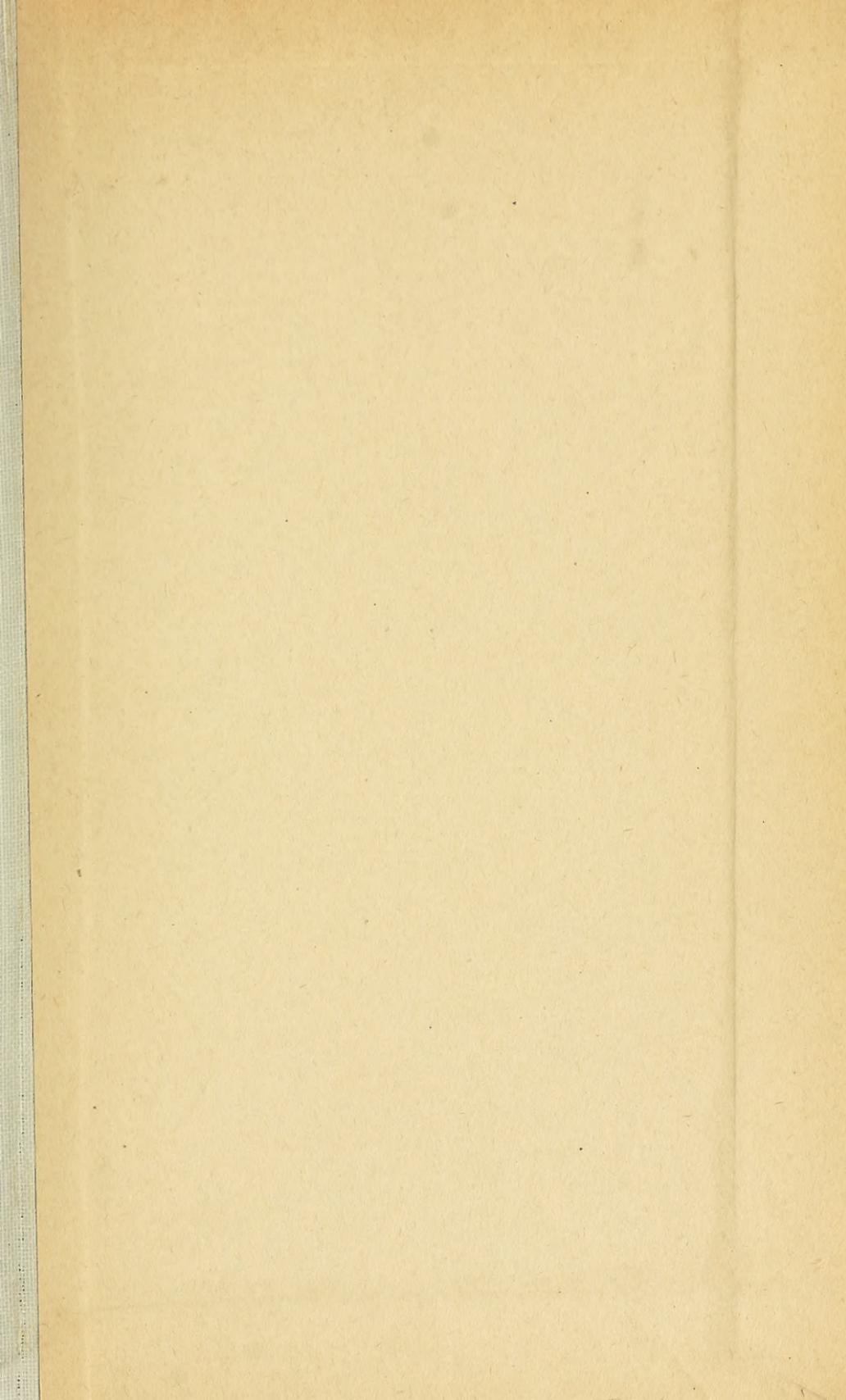
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