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Bird-Lore

AN ILLUSTRATED BI-MONTHLY MAGAZINE DEVOTED TO THE STUDY AND PROTECTION OF BIRDS

EDITED BY

FRANK M. CHAPMAN

Official Organ of the Audubon Societies

AUDUBON DEPARTMENT EDITED BY

MABEL OSGOOD WRIGHT

AND

WILLIAM DUTCHER

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BY AUTHORS

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FRANK M. CHAPMAN

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☞ **To subscribers whose subscription expired with the issue for December, 1903,** and who have as yet neither renewed their subscription nor, in response to our request, sent us a notice to discontinue their magazine, the present number is sent in the belief that the matter of renewal has been overlooked. We trust it will now receive prompt attention.

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1. Hooded Warbler. Male.
2. Hooded Warbler, Adult Female.
3. Hooded Warbler, Young Female.
4. Yellow-breasted Chat, Adult.

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A BI-MONTHLY MAGAZINE
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OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. VI JANUARY — FEBRUARY, 1904 No. 1

The Black Tern at Home

By ERNEST THOMPSON SETON and FRANK M. CHAPMAN

With photographs from nature

"CRAIK — craik — craik!" screamed the old Black Tern, in anxious quavering note, as we crossed the low prairie to the particular pond that she had consecrated by making her home on its weedy waters.

The nest had been discovered on June 16, 1901, not far from our camp, near Shoal Lake, Manitoba. A small knob of mud and water-soaked vegetation was selected as a foundation on which to place the nest of coarse reeds. At this time it contained one egg. On June 18 a second egg was laid and, without waiting for the usual complement of three, incubation was begun.

At no time during this remarkable period of a bird's year did the Terns fail to resent intrusion on their haunts. The Blue-winged Teal and Wilson's Phalarope nesting in the long grasses on the border of the slough fluttered from their eggs only when one seemed about to step upon them, but the Tern sprang into the air and, with sharp screams, came to meet us when we were thirty yards away.

On June 25, there occurred an unusually heavy fall of rain, raising the water in the slough several inches and threatening to inundate the little island. But the Terns saved their eggs from the flood by bringing fresh nesting material and raising the height of their home; though whether the action was performed with a definite object or was merely such a display of the nest-building instinct as is not infrequently seen during incubation, it is difficult to determine.

On July 5, after an incubation period, therefore, of seventeen days, the first egg hatched. Three days later we visited the nest, expecting to see a pair of downy young, but, to our surprise and disappointment, it was deserted. Evidently, however, there was something not far away in which

BLACK TERN INCUBATING
June 29, 1901

BLACK TERN BROODING YOUNG
July 8, 1901

the Terns were greatly concerned. With piercing screams they darted at us, once actually hitting Mr. Seton's hat.

Search failing to reveal any sign of the young birds, the camera was left to play detective. Focusing it on the empty nest and surrounding it with 'cat-tails,' we attached some seventy feet of tubing and retired to the high grasses of a neighboring dry bank. But we were not hidden from the Tern. She hovered over us, shrieking her disgust with scarcely a pause, turning her long beak to this side and that, as she brought each eye in turn to bear. Finally, her *craiks* grew softer, and, fluttering over the nest, she uttered a soft *wheent—wheent—wheent*, which probably meant to her down-

YOUNG BLACK TERNS IN NEST
July 8, 1901

ings "It's all right; come back home now." After half a minute of this calling, she fluttered lower and dropped out of sight behind the reed barriers. Apparently, there could be little doubt that with her voice she had conjured the chicks back to the nest.

Acting on this belief, a dozen rapid strokes were given to the bicycle pump at the end of the tube, and the Tern promptly flew up into the air, uttering her loud *craik—craik* in a way that plainly showed something had happened close by to alarm her, and thus plainly told us that the shutter on the camera had been sprung. Instantly we rushed through the mud and water to the nest, but only to find it as empty as before.

Inserting a fresh plate in the camera, we returned to our hiding-place. Again the Tern scolded us vigorously, but after a while, as before, her fears seemed to decrease; she gradually drew nearer to the nest and eventually dropped lightly down into the reeds, evidently on it. After waiting a

BLACK TERN ATTACKING; HOVERING FOR THE DIVE
July 8, 1901

BLACK TERN ATTACKING; AFTER THE DIVE, THE UPWARD SWING
July 8, 1901

moment for her to settle herself, the bicycle pump was again used, and at the twelfth plunge of the piston the Tern shot upward as though she were blown from the end of the tube! We accepted her action as an unfailing indication that the shutter was properly released and once more splashed quickly through the water to see what we might see; but only an empty nest met our gaze, and we were as ignorant of the fate of the young Terns as we had been in the beginning.

The continued anxiety of the parents, however, encouraged us to continue our efforts to solve the mysterious disappearance of their chicks, and, after several more attempts similar to those just related, we reached the nest just in time to see the two little ones paddling away into the surrounding reeds, like ducklings. This caused us to believe that on each occasion they had returned to the nest only to desert it again as the old bird left them, but it was not until the plates were developed, a month later, that we could really put together the whole story. Its main facts are shown in the pictures which are here reproduced. One pictures the Tern while incubating. A second pictures her brooding her young after one of their enforced baths in the surrounding waters. Comparison of these pictures shows the difference in the poses of the bird during incubation and while brooding.

A third photograph reveals the two little Terns just as they had climbed into the nest after their long swim for safety. Cold they must have been and they are cuddling close together to keep each other warm,—so close indeed that one may be seen to have his arm about his brother's or sister's neck.

BLACK TERNS IN FLIGHT
July 6, 1901

Horned Larks in Colorado Springs, Colo.

By E. R. WARREN

With photographs from nature by the author

THE winter of 1902-3 was severe in Colorado, and during January and February enough snow lay on the ground about Colorado Springs to prevent the Horned Larks, which are numerous on the plains, from finding their usual supply of seeds. Hunger drove them into the city by thousands. Great flocks were on the down-town streets, feeding on anything in the shape of grain they could find, many being found about the grain- and feed-stores picking up the waste grain. Many people threw out millet and other seeds for them, and they soon learned to flock to those places.

In Alamo Park were two or three places about twelve feet in diameter where seed was thrown to them, and when there was nothing there the birds would be sitting about on the snow waiting. As soon as food was thrown on one of these places it would at once be so covered by the birds that not a bit of ground would be visible, only a mass of birds, fighting and struggling incessantly and keeping up a continual chirping.

Next to our house, in the north part of the city, is a vacant lot which was overgrown with weeds, and here the Larks came. I put millet out for them at a place where I could conveniently watch from the library window, and the birds soon found it. For several weeks they were about more or less of the time. It was a good place to set the camera and many exposures were made. But the birds are rather pugnacious and continually fighting, and it

HORNED LARKS IN COLORADO SPRINGS

always seemed that no sooner did one get into a good pose at just the right spot than another pitched into him and drove him away, or else he saw another off to one side which needed a thrashing immediately, and away he would go. Feathers would often fly in these little conflicts, and I have seen partly crippled birds which had been hurt in this way. A one-legged bird came about for several days and had rather a hard time, for the others invariably bullied him and drove him away.

I watched the various flocks closely for other species of birds especially Longspurs, which associate with them on the plains, but the only other bird seen was a Gray-crowned Leucosticte, which was feeding, on the morning of February 13, with a small flock of Larks, just after a new fall of snow. This was the second time I have seen the species in town, the other occasion being earlier in the winter, when I saw a single bird on the street.

HORNED LARK POSES

Mr. C. E. Aiken tells me that in the winter of 1871, I think, there were large flocks about the town, which was founded only the summer before. I do not think they very often get so far away from the mountains.

After the first of March the weather moderated, and the Larks, all of which appeared to be Desert Horned Larks, began to disappear, going out on the plains again.

The Christmas Bird Census

BIRD-LORE'S Fourth Christmas Bird Census was even more successful than any of the three which have preceded it. This fact is best expressed by a statement of the number of reports received each year since the Census was inaugurated. Thus, in 1900 twenty-five reports were sent in, in 1901, thirty-four, in 1902, fifty-three, and in 1903, seventy-eight.

The area covered extends from Ontario, Vermont, New Hampshire, Michigan and Wisconsin, south to Florida and Texas, west to California and Washington; and the Census is interesting, not alone from the number of reports made, but also because of the rather unusual character of their contents. Pine Grosbeaks, which last year were not mentioned by a single observer, are now reported from New Hampshire, Vermont and Michigan, to as far south as Wernersville, Pennsylvania, and Kewanee, Illinois, and Redpolls are also included in a number of the lists received. A further feature of the reports is the abundance of Chickadees noted.

Queenstown, Ontario, Canada, along River Road.—December 22; time, 11 A. M. to 12.30 P. M.; 1.30 P. M. to 5 P. M. Partly cloudy; ground bare, wind west to northwest, strong; temp., 24°. Herring Gull, 35; American Merganser, 2; Golden-eye, 5; Downy Woodpecker, 1; Blue Jay, 10; Crow, 3; Goldfinch, 3; White-breasted Nuthatch, 4; Chickadee, 60; Total, 9 species, 123 individuals.—HARRY HUBBARD LARKIN.

Wilton, N. H.—Time, 9.30 A. M. to 12 M. Cloudy; ground bare; wind west, light; temp., 42°. Ruffed Grouse, 3; Downy Woodpecker, 4; Blue Jay, 7; American Crow, 2; Pine Grosbeak, 43; American Goldfinch, 1; Tree Sparrow, 5; Junco, 7; Catbird, 1; Brown Creeper, 5; White-breasted Nuthatch, 4; Red-breasted Nuthatch, 4; Chickadee, 11. Total, 13 species, 97 individuals. The Catbird is evidently a 'left-over.' I have seen the bird once before, about three weeks ago, feeding on frozen apples.—GEORGE G. BLANCHARD.

Bethel, Vt.—December 24; time, 3 P. M. to 4.30 P. M. Heavy clouds, raining slightly; ground mostly snow-covered, as it has been since November 24; temp., 36°. From window overlooking a bird's lunch counter. Blue Jay, 4; Pine Grosbeak, 3; Goldfinch, 10; Chickadee, 7. Total, 4 species, 24 individuals.—ELTA M. LEWIS.

Bristol, Vt.—Time, 9 A. M. to 4 P. M. Cloudy; ground mostly bare; wind northwest, light; temp., 32°. Ruffed Grouse, 2; Downy Woodpecker, 2; Pileated Woodpecker, 1; Goldfinch, 31; Tree Sparrow, 45; White-breasted Nuthatch, 1; Chickadee, 6. Total, 7 species, 88 individuals.—A. C. DIKE.

Brattleboro, Vt.—Time, 9 A. M. to 2.30 P. M. Cloudy; ground partly covered with snow; wind south, light; temp., 43°. Downy Woodpecker, 2; White-throated Sparrow, 2; Tree Sparrow, 2; Brown Creeper, 4; White-breasted Nuthatch, 8; Red-breasted Nuthatch, 1; Chickadee, 18; Golden Crowned Kinglet, 4. Total 8 species, 41 individuals.—WM. C. HORTON.

Nahant, Mass.—December 28; 9.30 to 3.30. Clear; snow on ground; wind northwest, fresh; temp., 16°. Holbœll's Grebe, 2; Loon, 2; Red-throated Loon, 1; Great Black-backed Gull, 15; Herring Gull, 75; Red-breasted Merganser, 24; American Golden-eye, 18; Old Squaw, 7; White-winged Scoter, 4; Crow, 30; Redpoll [probably Greater], 1; Song Sparrow, 5; Mockingbird, 1; Chickadee, 7. Total, 14 species, 185 individuals.—HERVEY W. KING.

Moon Island and Squantum, Mass.— December 24; time, 9 A. M. to 2 P. M. Cloudy; ground bare; wind southwest, light; temp., 36° to 47°. Horned Grebe, 1; Black-backed Gull, 2; Herring Gull, 245; American Scaup Duck, 415; American Golden-eye, 137; Buffle-head, 40; Old Squaw, 14; American Scoter, 18; Northern Downy Woodpecker, 1; Flicker, 6: American Crow, 151; Meadowlark, 6 (several in song); Tree Sparrow, 1; Song Sparrow, 4; Chickadee, 11; Robin, 1. Total, 16 species, 1,053 individuals.—FRANCIS G. and MAURICE C. BLAKE.

Nahant Beach, Mass.— December 26; time, 10.20 A. M. to 12.20 P. M. Cloudy; snowing heavily; ground covered; wind northwest, very high; temp., 24° to 33°. Black-backed Gulls, 5; Herring Gull, 71; Horned Lark, 11; American Crow, 16; Song Sparrow, 1; Chickadee, 1. (The snow made it impossible to see out over the water.) Total, 6 species, 105 individuals.—FRANCIS G. and MAURICE C. BLAKE.

Boston, Mass. (Charles River, the Back Bay Fens, Parkway, Olmstead Park, Jamaica Pond and the Arnold Arboretum). December 28; time, 8.45 A. M. to 3 P. M. Clear; ground covered; wind west, brisk; temp., 16°. Black-backed Gull, 7; Herring Gull, 39; Black Duck, 6; American Golden-eye, 57; Hairy Woodpecker, 1; Downy Woodpecker, 1; Flicker, 26; Blue Jay, 10; American Crow, 13; Pine Grosbeak, 3; White-winged Crossbill, 3; American Goldfinch, 11; White-throated Sparrow, 8; Tree Sparrow, 6; Junco, 13; Song Sparrow, 5; Northern Shrike, 1; Brown Creeper, 3; Chickadee, 26; Golden-crowned Kinglet, 7. Total, 21 species, 240 individuals.—FRANCIS G. and MAURICE C. BLAKE.

Boston, Mass. (From Harvard Bridge through the Back Bay Fens and Riverway, Olmstead and Jamaica Parks and the Arnold Arboretum; six miles of the city park system.) — December 24; 8.30 to 4. Cloudy; ground bare; wind southwest, light; temp., 39° to 47°. Great Black-backed Gull, 1; Herring Gull, 22; Black Duck, 116 (six on Jamaica Pond); American Golden-eye, 172; Bob-white, 13; Sharp-shinned Hawk, 1; Sparrow Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 1; Flicker, 21; Blue Jay, 7; Crow, 24; Pine Grosbeak, 12; Purple Finch, 2; Goldfinch, 11; White-throated Sparrow, 10 (two in song); Junco, 21; Song Sparrow, 8; Fox Sparrow, 2; Myrtle Warbler, 1; Brown Creeper, 3; White-breasted Nuthatch, 5; Chickadee, 44; Golden-crowned Kinglet, 4. Total, 24 species, 503 individuals. December 19. Northern Shrike, 1; American Crossbill, 1; Tree Sparrow, 21; Hermit Thrush, 1; Robin, 1.—HORACE W. WRIGHT.

Forest Hill Station, Mass. (through the Arnold Arboretum, Faulkner and Weld Farms to Chestnut Hill).—Time, 11.45 A. M. to 2.15 P. M. Sky overcast; wind light, no snow on the ground; temp., 45°. Flicker, 1; Crow, 8; Tree Sparrow, 4; Junco, 14; Brown Creeper, 1; White-breasted Nuthatch, 3; Chickadee, 10. Total, 7 species, 41 individuals.—J. S. CODMAN.

Cambridge, Mass., Fresh Pond.—December 26. Time, 9.50 A. M. to 11.30 A. M. Clear, ground bare; wind southeast, medium; temp., 35°. Great Black-backed Gull, 2; Herring Gull, 33; Sparrow Hawk, 1; Downy Woodpecker, 1; Crow, 5; Tree Sparrow, 1; Song Sparrow, 1; White-breasted Nuthatch, 2; Chickadee, 3; Golden-crowned Kinglet, 2. Total, 14 species, 52 individuals.—FRANCIS A. P. JAMES.

Cambridge, Mass.—Time, 9.10 A. M. to 12.10 P. M.; 3 P. M. to 4 P. M. Slight southwest wind. Sky heavily overcast. Rain in the afternoon. Great Black-backed Gull, 8; Herring Gull, 600; American Merganser, 1; Black Duck, 42; Mongolian Pheasant, 1; Sparrow Hawk, 2; Downy Woodpecker, 3; Flicker, 2; Crow, 11; Goldfinch, 1; Tree Sparrow, 46; Junco, 1; Song Sparrow, 6; Brown Creeper, 2; Chickadee, 14. Total, 15 species, 740 individuals. A Grackle was observed December 24.—HELEN C. SCORGIE and ELVIRA L. SCORGIE.

Cambridge, Mass., (past Fresh Pond through the Fresh Pond Marshes, over Arlington Heights to Waverly)—Time, 8.40 A. M. to 12 M. Cloudy; very light southwest

wind; temp., 42°. Herring Gull, 80; Black-backed Gull, 1; Merganser (American or Red-breasted), 1; Black Duck, 39; Golden-eye, 1 (all these on the Fresh Pond); Bob-white, 1; Downy Woodpecker, 3; Hairy Woodpecker, 1; Northern Flicker, 6; Crow, 20; Blue Jay, 1; Red-winged Blackbird, 2 (in the Fresh Pond Marshes); Pine Grosbeak, 2; Goldfinch, 2; Tree Sparrow, 20; Song Sparrow, 3; Brown Creeper, 2; White-breasted Nuthatch, 3; Chickadee, 30; Golden-crowned Kinglet, 25. Total, 21 species, 243 individuals.—ARTHUR C. COMEY.

Elmwood, Mass.—Time, 8 A. M. to 12 M. Cloudy; ground bare; wind southwest, light; temp., 40°. Downy Woodpecker, 1; Flicker, 7; Blue Jay, 5; Crow, 9; Meadowlark, 10; Goldfinch, 2; Tree Sparrow, 26; Junco, 12; Song Sparrow, 3; White-breasted Nuthatch, 1; Chickadee, 40. Total, 11 species, 116 individuals.—H. HERBERT MARSHALL.

Paxton, Mass.—Time, 10.45 A. M. to 12.30 P. M. Cloudy, ground bare; wind west, light; temp., 42°. Ruffed Grouse, 1; Pine Grosbeak, 21; Redpoll, 75; Tree Sparrow, 1; Chickadee, 3. Total, 5 species, about 101 individuals.—ABBY W. CHRISTENSEN.

Stoneham, Mass.—Time, 12.30 to 2 P. M. Sky clouded, ground bare; calm; temp., 40°. Herring Gull, 300; Black Duck, 200; Ruffed Grouse, 3; Downy Woodpecker, 2; Flicker, 1; Crow, 9; Blue Jay, 3; White-breasted Nuthatch, 1; Chickadee, 19. Total, 9 species, about 538 individuals.—ERNEST HAROLD BAYNES.

Milton Hill, Norfolk County, Mass.—Time, 7 to 9 A. M. Cloudy, warm; wind southwest, light; ground bare; temp., 42°. Herring Gull, 7; Snowy Owl, 1; Downy Woodpecker, 1; Flicker, 6; Blue Jay, 3; Crow, 100; Pine Grosbeak, 2; Redpoll, 7; Greater Redpoll, 2, in flock with preceding; Goldfinch, 3; Pine Siskin, 10; Song Sparrow, 6; Brown Creeper, 2; White-breasted Nuthatch, 3; Chickadee, 30; Golden-crowned Kinglet, 20; Robin, 4. Total, 17 species 207 individuals.—STANLEY COBBS.

Beverly, Mass.—December 24, 1903; 10 A. M. to 12 M. Cloudy; ground bare; wind northwest by west, light; temp., 40°. Downy Woodpecker, 1; Crow, 8; Goldfinch, 40; Flicker, 18; Tree Sparrow, 2; Song Sparrow, 1; Junco, 6; Myrtle Warbler, 2; Chickadee, 45; Brown Creeper, 1; White-breasted Nuthatch, 1; Golden-crowned Kinglet, 3; Pine Grosbeak, 41. Total, 13 species, 169 individuals.—CHARLOTTE W. BUTLER.

Woonsocket, R. I.—December 26; 7 to 10 A. M. Cloudy; light snow squalls; ground bare; wind north, light; temp., 30°. Blue Jay, 2; American Crow, 4; Goldfinch, 5; Tree Sparrow, 12; Junco, 9; Song Sparrow, 1; Winter Wren, 1; Brown Creeper, 1; Golden-crowned Kinglet, 5. Total, 9 species, 40 individuals.—CLARENCE M. ARNOLD.

Providence, R. I.—Dec. 24, 10.30 A. M. to 1 P. M. Overcast; ground bare; wind south, in gusts; temp., 30°. Crow, 10; Blue Jay, 2; Meadowlark, 1; Swamp Sparrow, 4; Tree Sparrow, 25; Fox Sparrow, 2; Junco, 30; Goldfinch, 6; Chickadee, 12; Bluebird, 1. Total, 10 species, 93 individuals.—ANNA E. COBB.

Glocester, Providence Co., R. I.—Time, 8.30 A. M. to 12.30 P. M. Cloudy, raining at noon; ground bare; wind west, light; temp., 40°. Ruffed Grouse, 8; Downy Woodpecker, 1; Blue Jay, 1; Tree Sparrow, 3; Myrtle Warbler (flock), 15; Chickadee, 8 Total, 6 species, 36 individuals. December 9, saw 3 Pine Grosbeaks. December 12, 13 and 15, saw 1 Robin, probably same individual. Flock of 40 or 50 Goldfinches seen frequently.—J. IRVING HILL.

Bristol, Conn.— December 25, 7 A. M. to 1 P. M.; December 26, 7 A. M. to 9.30 A. M. Ruffed Grouse, 9; Marsh Hawk, 1; Red-tailed Hawk, 1; Pigeon Hawk, 1; Sparrow Hawk, 1; Hairy Woodpecker, 2; Downy Woodpecker, 6; Blue Jay, 29; Crow, 233; Pine Grosbeak, 6; Goldfinch, 59; Tree Sparrow, 49; Junco, 9; Winter Wren, 1; Brown Creeper, 3; White-breasted Nuthatch, 27; Red-breasted Nuthatch, 2; Chickadee,

72; Golden-crowned Kinglet, 12; Bluebird, 3. Total, 20 species, 526 individuals. December 23 a male Towhee was seen.— FRANK BRUEN, R. W. FORD, F. H. HOLME, NEWTON MANROSS and EGBERT SMITH.

Edgewood Park, New Haven, Conn.— Time, 9.45 A. M. to 1 P. M. Cloudy to rainy; ground bare; wind northwest, light; temp., 39°. Crow, 5; Blue Jay, 2; Song Sparrow, 2; Northern Shrike, 1; White-breasted Nuthatch, 1; Chickadee, 19. Total, 6 species, 30 individuals.—A. A. SAUNDERS.

South Norwalk, Conn.— Distance covered, 8 miles. Cloudy, with rain; temp., 40°. Grebe, 3; Loon, 3; Herring Gull, 193; Black Duck, 25; Shoveler, 175; Golden-eye, 10; Old Squaw, 50; Downy Woodpecker, 11; Blue Jay, 3; Crow, 10; Meadowlark, 29; Junco, 46; Tree Sparrow, 51; Song Sparrow, 7; Chickadee, 16; White-breasted Nuthatch, 7. Total, 16 species, 579 individuals. December 22 a Carolina Wren was seen.— WILBUR SMITH (land-birds) and THOMAS SAUNDERS (water-birds).

Saranac Lake, N. Y.— Time, 9.30 A. M. to 11.30 A. M.; 12.30 P. M. to 1.45 P. M. Cloudy; wind westerly and gusty; ground covered with eighteen inches of snow; temp., 20° to 24°. Pine Grosbeak, 17; Brown Creeper, 1; White-breasted Nuthatch, 2. Total, 3 species, 20 individuals.—NORMAN MCLEOD CARTER.

Canandaigua, N. Y.—Time, 8.30 A. M. to 12 M., 2 to 4 P. M. Cloudy; wind west, strong in the morning, light in the afternoon, snow falling most of the time; temp., 27°. Herring Gull, 1; American Scaup Duck, 1; Downy Woodpecker, 2; Red-headed Woodpecker, 1; Crow, about 200; Tree Sparrow, 11; Song Sparrow, 1; White-breasted Nuthatch, 5; Chickadee, 21. Total, 9 species, 243 individuals.—FRANK T. ANTES.

Auburn, N. Y.—Time, 9 A. M. to 2 P. M. Ground covered with snow, strong northwest wind and snow falling heavily during forenoon; temp., 20°. Horned Grebe, 4; Herring Gull, 1; American Merganser, 3; American Golden-eye, 1; Hairy Woodpecker, 1; Downy Woodpecker, 1; Crow, 151; Tree Sparrow, 4; White-breasted Nuthatch, 4. Total, 9 species, 170 individuals.—F. J. STUPP.

Hilton, N. Y.—December 21; 9 A. M. to 12 M., 1 P. M. to 4 P. M. Ground covered with snow; clear; wind not preceptible; temp., 31° to 33°. Pheasant (*Phasianus torquatus*), 1; Hairy Woodpecker, 1; Downy Woodpecker, 7; Crow, 15; American Goldfinch, 20; Snowflake, 200; Tree Sparrow, 50; Junco, 2; Song Sparrow, 2; White-breasted Nuthatch, 9; Chickadee, 30; Golden-crowned Kinglet, 11. Total, 12 species, 348 individuals.—JOHN ARCHER and ALBERT H. WRIGHT.

Rhinebeck, N. Y.—Time, 8.45 to 9.45 A. M., and 2.15 to 4.15 P. M. Cloudy; wind west, light; temp., 39°. Bob-white, 1; Ruffed Grouse, 3; Red-tailed Hawk, 1; Hairy Woodpecker, 1; Downy Woodpecker, 1; Blue Jay, 4; Crow, 8; Tree Sparrow, 2; Brown Creeper, 2; White-breasted Nuthatch, 4; Chickadee, 14; Golden-crowned Kinglet, 1; Robin, 1. Total, 13 species, about 43 individuals.—MAUNSELL S. CROSBY.

Huntington, Long Island, N. Y.—December 24; 9 A. M. to 12 M. Cloudy, ground bare; wind southeast, light; temp., 38°. Downy Woodpecker, 3; Flicker, 1; Yellow-bellied Sapsucker, 1; Crow, 7; Blue Jay, 1; Meadowlark, 8; Goldfinch, 15; Tree Sparrow, 4; Junco, 26; Song Sparrow, 2; Cedarbird, 4; Myrtle Warbler, 3; White-breasted Nuthatch, 3; Chickadee, 18; Robin, 4. Total, 15 species, 100 individuals.— CHARLOTTE E. LEE.

Greenport, L. I.—Time, 9.30 A. M. to 12 M. Raining, ground bare; wind southwest, light; temp., 53°. Herring Gull, 27; Black Duck, 48; Downy Woodpecker, 2; Crow, 14; Meadowlark, 1; Pine Siskin, 6; Redpoll, 8; Song Sparrow, 4; Junco, 50; Myrtle Warbler, 200; White-breasted Nuthatch, 1; Chickadee, 28; Robin, 1. Total, 13 species, about 380 individuals.—KARL B. SQUIRES.

College Point, N. Y.—Time, 10.30 A. M. to 1.30 P. M.; 3.40 P. M. to 4.45 P. M. Cloudy, rain in forenoon; ground bare; wind west, brisk; temp., 44°. Herring Gull, 3; Crow, 4; Meadowlark, 1; Junco, 10; Tree Sparrow, 12; Song Sparrow, 15; Chickadee, 4. Total, 7 species, 49 individuals.—FRANCIS HARPER.

Rockaway Park Beach, L. I.—December 24, 1903; time, 10.25 A. M. to 2.30 P. M. Weather cloudy; wind, brisk southwest; ground without snow; Herring Gull, common all along, with one flock of 90; Black-backed Gull, 7; Duck, species 4; Crow, 35; Meadowlark, 1; Tree Sparrow, several; Robin, 1. Total, 7 species.—CHARLES H. ROGERS and HAROLD E. PORTER.

Central Park, New York City. — December 26, 12.25 P. M. to 3.45 P. M. Weather, fine; wind, strong, west; ground covered with light and drifting snow; temp., 16° to 27°. Herring Gull, 1 flock of 60; Downy Woodpecker, 2; White-throated Sparrow, 2; Song Sparrow, 2; Cardinal, 1; White-breasted Nuthatch, 2; Chickadee, 8. Total, 7 species, 78 individuals.—CHARLES H. ROGERS.

Central Park, New York City (north of 72d street).—Time, 11 A. M. to 1 P. M. Light, southwest wind. Rain throughout; temp., 42°. Herring Gull, 1,100; Hairy Woodpecker, 1; Downy Woodpecker, 4; Starling, 3; White-throated Sparrow, 75; Song Sparrow, 1; Cardinal, 4; Brown Creeper, 3; White-breasted Nuthatch, 6; Chickadee, 25. Total, 10 species (exclusive of House Sparrows), about 1,222 individuals. —CLINTON G. ABBOTT.

Central Park, New York City.—9.30 to 11. Wind moderate, southwest; a heavy rain most of the time; temp., 38°. Herring Gull, 1,200 (estimated); Hairy Woodpecker, 1; Downy Woodpecker, 1; Starling, 4; White-throated Sparrow, 11; Song Sparrow, 3; Cardinal, 2; Junco, 4; White-breasted Nuthatch, 1; Chickadee, 22; Hermit Thrush, 1. Total, 11 species, 1,250 individuals.—ISAAC BILDERSEE.

Central Park, New York City.—Time, 8.45 to 10.25 A. M. Cloudy, sprinkling part of the time; light southwest wind; temp., 43°. Herring Gull, 500 (estimated); Downy Woodpecker, 1; Starling, 3; White-throated Sparrow, 7; Song Sparrow, 1; Red-breasted Nuthatch, 1; Chickadee, 5; Hermit Thrush, 1. Total, 8 species, about 519 individuals.—GEORGE E. HIX.

Montclair, N. J.—Time, 8.30 A. M. to 1 P. M.; 2.30 P. M. to 5.30 P. M. Weather cloudy, with light rain turning to snow; ground bare; wind northwest to south, light; temp., 35°. Cooper's Hawk, 1; Downy Woodpecker, 2; Blue Jay, 5; Crow, 71; Purple Grackle, 1; Pine Grosbeak, 17; Goldfinch, 7; Tree Sparrow, 16; Junco, 400; Song Sparrow, 3; Northern Shrike, 2; Carolina Wren, 2 (has been seen several times since fall); Brown Creeper, 2; White-breasted Nuthatch, 6; Chickadee, 47; Golden-crowned Kinglet, 4; Robin, 1; Bluebird, 13. Total, 18 species, 600 individuals.—VINCENT E. GORMAN and FRED T. MORISON.

Passaic, N. J.—9 A. M. to 11.30 A. M. Cloudy, raining part of the time; ground bare; wind southwest, light; temp., 40°. Crow, 3; Song Sparrow, 3; Tree Sparrow, 4; White-throated Sparrow, 3; Brown Creeper, 1; Chickadee, 2; White-breasted Nuthatch, 1. Total, 7 species, 17 individuals.—GILBERT H. TRAFTON.

Beverly, N. J.—December 26, 8 A. M. to 3.30 P. M. Snow flurries in the morning, clear in the afternoon, ground bare; wind southwest, changing to northwest, very strong; average temp., 28°. Bob-white, 8; Red-tailed Hawk, 1; Downy Woodpecker, 12; Blue Jay, 1; Crow, 500; Goldfinch, 6; White-throated Sparrow, 50; Tree Sparrow, 20; Junco, 200; Song Sparrow, 15; Cardinal, 13; White-breasted Nuthatch, 5; Red-breasted Nuthatch, 1; Tufted Titmouse, 20; Chickadee, 32; Golden-crowned Kinglet, 7. Total, 16 species, 892 individuals.—J. FLETCHER STREET.

Moorestown, N. J.—Time, 9.30 A. M. to 12.30 P. M. Raining, ground bare; wind west, very light; temp., 40°. Blue Jay, 4; Crow, 12; White-throated Sparrow, 10; Tree Sparrow, 4; Junco, 1; Song Sparrow, 15 (singing); Cardinal, 4; Catbird, 1 (wing injured); Winter Wren, 4 (singing); Golden-crowned Kinglet, 2. Total, 10 species, 57 individuals.—L. M. JACOB and A. A. MICKLE.

Moorestown, Burlington County, N. J.—Time, 6.55 A. M. to 7.55 A. M. and 8.45 A. M. to 5.15 P. M. Weather, overcast, high clouds. At 7.50 A. M. light rain set in,

continuing briskly till 2.18 P. M., when it slackened and ceased. Wind light, northwest; ground bare of snow; temp., 38°. Bob-white, 4; Red-tailed Hawk, 5; Sparrow Hawk, 3; Downy Woodpecker, 10; Flicker, 3; Blue Jay, 2; Crow, 50; Meadowlark, 19; Purple Grackle, 2; Goldfinch, 1; White-throated Sparrow, 13; Tree Sparrow, 72; Junco, 114; Song Sparrow, 11; Cardinal, 10; Northern Shrike, 1; Catbird, 1 (with one drooping wing; probably unable to migrate); Winter Wren, 4; White-breasted Nuthatch, 2; Red-breasted Nuthatch, 1; Tufted Titmouse, 9; Black-capped Chickadee, 6; Golden-crowned Kinglet, 2; Hermit Thrush, 1; Robin, 1. Total, 25 species, about 347 individuals.—WILLIAM B. EVANS.

Newfield, Gloucester County, N. J.—Time, 2.20 P. M. to 4.40 P. M. Drizzling rain, with slight mist; ground bare; no wind; temp., 38°. Downy Woodpecker, 2; Flicker, 2; Blue Jay, 2; Junco, 200; Tree Sparrow, 30; Song Sparrow, 3; Chickadee, 12; Golden-crowned Kinglet, 1. Total, 8 species, about 252 individuals.—WM. W. FAIR.

Wildwood, Cape May County, N. J. (Five-Mile Beach to Rio Grand and Anglesea Junction).—December 27. Time, 7.30 A. M. to 4.30 P. M. Fair and cloudy; wind southwest, heavy; temp., 8°. Black-backed Gull, 2 adults; Herring Gull, 100; Ring-billed Gull, 2; Scaup Duck, 15; Killdeer, 2; Turkey Buzzard, 2; Marsh Hawk, 1; Sharp-shinned Hawk, 1; Red-tailed Hawk, 3; Bald Eagle, 1; Hairy Woodpecker, 1; Downy Woodpecker, 2; Flicker, 6; Horned Lark, 1; Blue Jay, 2; Crow, 300; Red-winged Blackbird, 1 young male; Meadowlark, 75; Purple Finch, 15; Goldfinch, 50; White-throated Sparrow, 75; Tree Sparrow, 6; Field Sparrow, 2; Junco, 200; Song Sparrow, 75; Fox Sparrow, 25; Towhee, 3 males, 1 female; Cardinal, 16; Myrtle Warbler, 800; Mockingbird, 1; Brown Thrasher, 2; Carolina Wren, 15; White-breasted Nuthatch, 4; Carolina Chickadee, 25; Hermit Thrush, 4; Robin, 150; Bluebird, 75. Total, 37 species, 2,061 individuals.—WM. L. BAILY.

Fairmount Park, Philadelphia, Pa.—Time, 9 A. M. to 4.30 P. M. Cloudy, a steady rain falling, clearing about 2 P. M.; ground bare; wind southwest, light; temp., 40°. American Herring Gull, 2; American Merganser, 20; Red-tailed Hawk, 1; Cooper's Hawk, 1; Sparrow Hawk, 1; Downy Woodpecker, 2; Flicker, 2; Crow, 50; White-throated Sparrow, 4; Junco, 30; Song Sparrow, 14; Carolina Wren, 2; Winter Wren, 1; White-breasted Nuthatch, 1; Chickadee, 8; Golden-crowned Kinglet, 4; Ruby-crowned Kinglet, 1. (I am certain of this bird's identity. I was within 6 feet of it and it displayed its ruby crown-patch five or six times. It was in company with a Song Sparrow exploring a weed patch and brush heap.) Total, 17 species, 144 individuals. On December 6, Cardinals, Crested Titmice and Brown Creepers were seen. Today is the first time that I have failed to find Cardinals in Fairmount Park.—CHRESWELL J. HUNT.

Wissinoming, Pa.— Dec. 23; 1 to 4 P. M. Clear; wind west, moderate; temp., 45°. Crow, 7; Tree Sparrow, 25; Junco, 1; Song Sparrow, 7; Fox Sparrow, 3; Cardinal, 2; White-breasted Nuthatch, 1; Tufted Titmouse, 1; Winter Wren, heard. Total, 10 species, about 46 individuals.—RICHARD F. MILLER.

Near West Chester, Pa.—Cloudy, rain most of day; light southwest wind. Red-tailed Hawk, 1; Downy Woodpecker, 3; Crow, 50; Junco, 200; Tree Sparrow, 50; Song Sparrow, 10; White-breasted Nuthatch, 6; Chickadee, 5; Brown Creeper, 2. Total, 9 species, 327 individuals.—THOMAS H. JACKSON.

Glenside, Pa.—Time, 11 A. M. to 12.30 P. M. Rainy; wind south, light; temp., 43°. Sparrow Hawk, 1; Red-tailed Hawk, 1; Flicker, 3; Downy Woodpecker, 1; Crow, 50; Fish Crow, 1; Meadowlark, 7; Song Sparrow, 1; Junco, 12; Chickadee, 4. Total, 10 species, 81 individuals.—SAMUEL H. BARKER.

Rohrerstown, Pa.—Time, 2 to 5 P. M. Cloudy; ground bare, except snow on north side of hills; temp., 40°. Cooper's Hawk 1; Screech Owl, 1; Hairy Woodpecker, 2;

Downy Woodpecker, 5; Crow, 200; Tree Sparrow, 40; Junco, 30; Song Sparrow, 1; Cardinal, 1; White-breasted Nuthatch, 1; Chickadee, 18. Total, 11 species, about 300 individuals.—Jacob Stehman.

Lansdowne, Pa.—Time, 7.45 A. M. to 8.30 A. M. Light rain; ground bare; wind east, light; temp., 42°. Duck (Baldpate?), 1; Downy Woodpecker, 1; Crow, 12; Goldfinch, 30; Vesper Sparrow, 1; White-throated Sparrow, 6; Field Sparrow, 6; Junco, 6; Song Sparrow, 3; Cardinal, 2; Golden-crowned Kinglet, 4. Total, 11 species, 72 individuals.—J. Harold Austin.

Wernersville, Pa.—Time, 9.30 A. M. to 11.30 A. M. Cloudy; patches of snow on hillsides, low ground bare; wind southeast, light; temp., 40°. Downy Woodpecker, 2; Blue Jay, 4; Crow, 25; Pine Grosbeak, 10; Goldfinch, 7; Tree Sparrow, 2; Junco, 70; Song Sparrow, 2; Cardinal 6; Cedar Waxwing, 5; White-breasted Nuthatch, 3; Chickadee, 4. Total, 12 species, 140 individuals.—Caroline B. Thompson.

Durham, N. C.—Time, 1 to 2.30 P. M. Weather, gray and rainy, rather warm. Species observed; Turkey Vulture, 1; Downy Woodpecker, 1; Flicker, 5; Crow, 5; Goldfinch, 15; White-throated Sparrow, 15; Field Sparrow, 50; Junco, 150; Song Sparrow, 75; Cardinal, 1; Carolina Wren, 7; Tufted Titmouse, 3; Carolina Chickadee, 4; Bluebird, 25; White-breasted Nuthatch, 1. Total, 15 species, 358 individuals.—Ernest Seeman.

Atlanta, Ga.—Time, 10.30 A. M. to 3 P. M. Cloudy, rain in A. M.; ground bare; wind north, light; temp., 54°. Killdeer, 3; Bob-white, 8; Mourning Dove, 5; Turkey Vulture, 19; Broad-winged Hawk, 6; Sparrow Hawk, 4; Downy Woodpecker, 7; Red-bellied Woodpecker, 2; Flicker, 6; Meadowlark, 12; Blue Jay, 8; Crow, 7; Red-winged Blackbird, 250; Purple Grackle, 3; Goldfinch, 9; White-throated Sparrow, 3; Field Sparrow, 41; Junco, 22; Towhee, 5; Cardinal, 9; Cedar Waxwing, 18; Logger-head Shrike, 1; Mockingbird, 3; Brown Thrasher, 2; House Wren, 8; Tufted Titmouse, 9; Carolina Chickadee, 10; Golden-crowned Kinglet, 33; Robin, 28; Bluebird, 15. Total, 30 species, about 556 individuals.—Eugene L. McDaniel.

Miami, Florida.—December 26; time, 8.30 A. M. to 10.30 A. M.; temp., 81°. Observed from March Cottage. Ground Dove, Turkey Buzzard, Black Vulture, Ruby-throated Hummingbird, Phœbe, Fish Crow, Blue Jay, Boat-tailed Grackle, Baltimore Oriole, Cardinal, Palm Warbler, Parula Warbler, Ovenbird. Total, 13 species.—Sarah F. Ainsworth.

Jackson, Miss.—Time, 2 to 3.30 P. M. Cloudy; temp., 52°. Turkey Vulture, 7; Black Vulture, 5; Downy Woodpecker, 2; Hairy Woodpecker, 2; Red-bellied Woodpecker, 2; Flicker, 4; Song Sparrow, 2; White-crowned Sparrow, 2; Fox Sparrow, 4; Cardinal, 5; Myrtle Warbler, 15; Winter Wren, 1; Carolina Wren, 1; Thrasher, 2; Mockingbird, 3; Golden-crowned Kinglet, 1; Bluebird, 3. Total, 17 species, 61 individuals.—J. T. Park.

Knickerbocker, Tom Green County, Texas.—December 22, 9 A. M. to 11.30 A. M. and 3.30 P. M. to 5.30 P. M. Clear; ground bare; wind south, light; temp., 60°. Pied-billed Grebe, 2; Red-breasted Merganser, 15; Mallard, 33; Green- and Blue-winged Teal, 14; Great Blue Heron, 1; Wilson Snipe, 1; Killdeer, 2; Scaled Partridge, 11; Mourning Dove, 4; Black Vulture, 10; Sharp-shinned Hawk, 1; Red-tailed Hawk, 2; Sparrow Hawk, 1; Belted Kingfisher, 3; Texan Woodpecker, 3; Golden-fronted Woodpecker, 7; Red-shafted Woodpecker, 8; Phœbe, 3; Pallid (?) Horned-Lark, 35; Texan Jay, 3; Western Meadow-lark, 50; Bronzed Grackle, 20; (?) Goldfinch, 8; Western Vesper Sparrow, 6; Gambel White-crowned Sparrow, 30; Black-throated Sparrow, 2; Mountain Song Sparrow, 9; Gray-tailed Cardinal, 7; Lark Bunting, 35; Cedar Waxwing (?), 6; White-rumped Shrike, 1; Audubon Warbler, 3; Grinnell Water-Thrush, 1; Western Mockingbird, 10; Baird Wren, 3; Rocky Mountain Creeper, 1; Red-breasted Nuthatch, 1; Black-crested Titmouse, 4; Golden-crowned Kinglet, 6;

Ruby-crowned Kinglet, 4; Western Robin, 150; Chestnut-backed Bluebird, 8. Total, 44 species, 531 individuals.—Wm. Gray Harman.

La Grange, Missouri.—December 24; 9 A. M. to 1.30 P. M. Clearing after rainy night, very muddy; wind northwest, brisk; temp., 38°. Red-shouldered Hawk, 2; Hairy Woodpecker, 1; Downy Woodpecker, 4; Red-bellied Woodpecker, 4; Blue Jay, 11; Crow, 4; Purple Finch, 3; Goldfinch, 16; Tree Sparrow, 20; Junco, 53; Cardinal, 6; Shrike, 1; White-breasted Nuthatch, 4; Tufted Titmouse, 8; Chickadee, 20. Total, 15 species, 157 individuals.—Susan M. Johnson.

Clearmont, Mo.—Time, 7.30 to 8 A. M., and 9.10 A. M. to 1.50 P. M. Cloudy at start, clearing later, ground bare; wind southwest. Red-tailed Hawk, 2; Marsh Hawk, 1; Great-horned Owl, 1; Screech Owl, 1; Downy Woodpecker, 7; Red-bellied Woodpecker, 1; Crow, 330; Blue Jay, 5; Goldfinch, 1; Tree Sparrow, 75; Junco, 14; Cardinal, 1; Tufted Titmouse, 5; Chickadee, 27; White-breasted Nuthatch, 9; Brown Creeper, 3. Total, 16 species, 486 individuals.—Edward W. Graves.

Cameron, Clinton County, Mo.—Time, 11 A. M to 12.30 P. M. Sky cloudy and overcast with driving, sleet-like snow; wind cold, from the northwest and blowing from, about 35 miles to 40 miles; temp., 26°. Downy Woodpecker, 2; Blue Jay, 6; Cardinal, 1; Junco, 12; Chickadee, 2; White-breasted Nuthatch, 2. Total, 6 species, 25 individuals.—Charles Norman.

Lexington, Ky.—Time, 7 to 8 A. M., 10 to 11 A. M., 3 to 4 P. M. Clear, ground bare; wind west, fresh to brisk; temp., 35°. Sparrow Hawk, 3; Screech Owl (heard at evening) 1; Hairy Woodpecker, 1; Downy Woodpecker, 1; Horned Lark, 11; American Crow, 100 and more; Bronzed Grackle, 17, Tree Sparrow, 2; Song Sparrow, 10; Cardinal, 3; Mockingbird, 1; Carolina Wren, 2; Brown Creeper, 2; Tufted Titmouse, 1; Carolina Chickadee, 11; Golden-crowned Kinglet, 3. Total, 16 species, 169 individuals —R. H. Dean.

Mount Carmel, Ill.—December 22. Time, 8 A. M. to 11.30 A. M.; 2 P. M. to 4 P. M. Clear; ground bare; light west wind; temp., 24°. Duck, about 125 (flying, and too far away to make positive identification possible); Turkey Vulture, 1; Red-tailed Hawk, 1; Sparrow Hawk, 4; Hairy Woodpecker, 8; Downy Woodpecker, 11; Yellow-bellied Sapsucker, 1; Red-headed Woodpecker, 16; Red-bellied Woodpecker, 12; Flicker, 14; Prairie Horned Lark, 13; Blue Jay, 23; Crow, 35; Meadowlark, about 60; Goldfinch, 26; Tree Sparrow, 75; Junco, 65; Song Sparrow, 5; Cardinal, 22; Loggerhead Shrike, 2; Carolina Wren, 3; Bewick's Wren, 1; Brown Creeper, 3; White-breasted Nuthatch, 9; Tufted Titmouse, about 40; Chickadee, 22; Bluebird, 19. Total, 27 species, about 616 individuals. December 26, I saw one Mockingbird.—Chas. F. Brennan.

Mount Carmel, Ill.—Time, sunrise until 2 P. M. Clear, temp., 35°. List of birds visiting 'lunch counter' at house near center of town. Downy Woodpecker, 3; Hairy Woodpecker, 1; Red-bellied Woodpecker, 1; Flicker, 2; Blue Jay, 9; Junco, 1; Cardinal, 9; Carolina Wren, 2; Bewick's Wren, 2; White-breasted Nuthatch, 5; Black-capped Chickadee, 15; Carolina Chickadee, 4, and English Sparrows without number.—E. F. Beull.

Kewanee, Ill.—Time, 7.30 A. M. to 11 A. M. Snow; wind south; temp., 20°. Downy Woodpecker, 2; Blue Jay, 3; Crow, 5; Pine Grosbeak, 8; Song Sparrow, 1; Junco, 25; Cardinal, 2; Carolina Chickadee, 16; White-breasted Nuthatch, 1. Total, 9 species, 63 individuals.—Clifford Crosby.

Rock Island, Ill.—Time, 10 A. M. to 12.40 P. M. Snowing, ground bare when snow began; wind southeast at 9 A. M., and northeast at 11.30, becoming a gale, with blinding clouds of snow; temp., 23°. Hairy Woodpecker, 2; Downy Woodpecker, 1; Red-headed Woodpecker, 2; Blue Jay, 10; Junco, 4; White-bellied Nuthatch, 3; Black-capped Chickadee, 9. Total, 7 species, 31 individuals.—Burtis H. Wilson.

Peoria, Ill.—Time, 10 A. M. to 12 M. Snow-storm at times blinding, two inches of snow on ground; wind west, strong; temp., 20°. Downy Woodpecker, 3; Hairy Woodpecker, 3; Prairie Horned Lark, 2; Crow, 2; Blue Jay, 6; Junco, 21; Tree Sparrow, 52; Purple Finch, 4; Cardinal, 9; Carolina Wren, 1; Chickadee, 26; Tufted Titmouse, 2; White-breasted Nuthatch, 3. Total, 13 species, 134 individuals.—W. H. PACKARD and C. S. VAN DEUSEN.

Evanston, Ill.—Time, 9 A. M. to 1 P. M. Snowing very hard, blinding at times; wind west, varying to northwest; temp., 15°; eight inches of snow on ground. Result of five-mile tramp: Herring Gull (immature), 2; Old Squaw Duck, 100; Junco, 20; Redpoll, 1; Chickadee, 12. Total, 5 species, 135 individuals.—H. S. PEPOON.

Jefferson, Ashtabula County, Ohio.—Time, 8 A. M. to 12 M., and 2 to 4 P. M. A gray day, west wind or none; a little fine snow, fields mostly bare, frozen; woods with crusty snow; temp., 22°. Ruffed Grouse, 2; Barred Owl, 1; Great Horned Owl, 1; Hairy Woodpecker, 2; Downy Woodpecker, 4; Northern Pileated Woodpecker, 2; Red-bellied Woodpecker, 1; Northern Flicker, 1; Blue Jay, 2; Tree Sparrow, 8; White-breasted Nuthatch, 8; Red-breasted Nuthatch, 1; Chickadee, 26. Total, 13 species, 59 individuals.—E. F., and ROBERT J SIM.

Cadiz, Ohio.—Time, 9 A. M. to 12.30 P. M. and 2.30 P. M. to 4.30 P. M. Partly cloudy; ground covered with snow, and ice in sheltered places only; wind southwest, moderate; temp., 35°. Distance walked (as registered by pedometer), 13 miles. Ruffed Grouse, 1, Mourning Dove, 1; Sharp-shinned Hawk, 1; Cooper's Hawk, 1; Red-tailed Hawk, 2; Sparrow Hawk, 2; Great Horned Owl, 1; Hairy Woodpecker, 4; Downy Woodpecker, 8; Red-bellied Woodpecker, 5; Blue Jay, 3; Tree Sparrow, 12; Junco, 22; Song Sparrow, 3; Cardinal, 9; Carolina Wren, 3; White-breasted Nuthatch, 15; Tufted Titmouse, 39; Chickadee, 28; Golden-crowned Kinglet, 1; Bluebird, 3. Total, 21 species, 164 individuals.—HARRY B. MCCONNELL.

McZena, Ohio.—December 24. Time, 8.50 A. M. to 1.50 P. M. Raining or snowing all the time; ground bare except remains of snowdrifts; wind southwest, strong; very disagreeable walking; temp., 39°. Bob-white, 10; Ruffed Grouse, 1; Mourning Dove, 24; Red-tailed Hawk, 1; Sparrow Hawk (?), 1; Hairy Woodpecker, 2; Downy Woodpecker, 6; Yellow-bellied Sapsucker, 1; Red-headed Woodpecker (heard); Red-bellied Woodpecker, 2; Northern Flicker, 1; Prairie Horned Lark, 2; Blue Jay, 10; American Goldfinch, 47; Tree Sparrow, 35; Junco, 24; Song Sparrow, 4; Cardinal, 6; Carolina Wren, 2; Brown Creeper (heard); White-breasted Nuthatch, 9; Red-breasted Nuthatch, 1; Tufted Titmouse, 18; Chickadee, 3; Golden-crowned Kinglet, 1. Total, 25 species, 213 individuals.—ZENO METCALF and C. L. METCALF.

Detroit River, Mich.—Time, 4 P. M. to 4.30 P. M. Snow-flurries, floating ice on river; wind northwest; temp., 26°. Herring Gull, 5; Ring-billed Gull, 3. Total, 2 species, 8 individuals.—ALEXANDER W. BLAIN, JR.

Port Sanilac, Mich.—December 26; time, 2.15 P. M. to 4.15 P. M. Clear; six to ten inches of snow; wind southwest, light; temp., 12°. Old Squaw (?), 18; Bob-white, 1; Crow, 160; Pine Grosbeak, 2; Snowflake, 120; Chickadee, 1. Total, 6 species, 302 individuals.—HARRIET W. THOMSON.

Appleton, Wis.—Time, 9.30 to 11.30 A. M. Cloudy, light snow falling, ground partly covered; wind northwest, light; temp. zero. Downy Woodpecker, 1; Prairie Horned Lark, 2; Crow, 2; Blue Jay, 3; Cedar Waxwing, 6; White-breasted Nuthatch, 2; Chickadee, 5. Total, 7 species, 21 individuals.—HENRY W. ABRAHAM.

Winneconne, Wis.—December 24; time, 9 A. M. to 12 M.; 1 P. M. to 3 P. M. Partly cloudy; two or three inches of snow; wind west, light; temp., 20°. Hairy Woodpecker, 2; Downy Woodpecker, 6; Blue Jay, 15; American Crow, 10; Red-winged Blackbird, 1; Evening Grosbeak, 10; American Goldfinch, 1; Snowflake, 200; Tree Sparrow, 20; White-breasted Nuthatch, 10; Chickadee, 10. Total, 11 species, 285 in-

dividuals. Pine Grosbeaks were seen in large numbers December 12, and a few December 19 and 26. Evening Grosbeaks have been very common since December 1. Brown Creepers, which are usually common all winter, I have been unable to find since November. The Red-winged Blackbird has been in the village all winter, although the temperature has been as low as 24° below zero and the ground covered with snow since November.—HENRY P. SEVERSON.

Decorah, Iowa.—Time, 10 A. M. to 2.30. Wind northwest, strong; temp., zero. Somewhat cloudy, though sun broke through occasionally. Great Horned Owl, 1; Red-tailed Hawk, 1; Ruffed Grouse, 7; Crow, 5; Blue Jay, 6; Hairy Woodpecker, 1; Goldfinch, 7; White-breasted Nuthatch, 1; Chickadee, 5. Total, 9 species, 34 individuals.—RETT E. OLMSTEAD.

Provo City, Utah.—Time, 10.30 A. M. to 4.30 P. M. Slightly hazy, half inch of snow; wind southwest, light; temp., 28°. Ducks, not identified, 3; Killdeer, 8; Goldfinch, 40; Marsh Hawk, 5; Western Red-tail, 1; Marsh Owl, 3; Dusky-horned Owl, 1; Downy Woodpecker, 2; Red-shafted Flicker, 15; Pallid-horned Lark, 46; Magpie, 37; American Raven, 2; Crow, 5; Piñon Jay, 2; Red-winged Blackbird, 203; Brewer Blackbird, 97; Western Evening Grosbeak, 12; House Finch, 30; Tree Sparrow, 40; Intermediate Junco, 63; Pink-sided Junco, 34; Song Sparrow (Subsp., one in song), 20; Bohemian Waxwing, 10; White-rumped Shrike, 2; Mountain Chickadee, 13. Total, 25 species, 694 individuals.—S. H. GOODWIN.

Napa, California.—Time, 11 A. M. to 3 P. M. Clear, ground bare; no wind; temp., 58°. American Bittern, 2; Killdeer, 1; Western Red-tail Hawk, 3; Belted Kingfisher, 1; Californian Woodpecker, 7; Red-shafted Flicker, 16; Anna's Humming-bird, 1; Say's Phœbe, 1; Black Phœbe, 5; California Jay, 29; American Crow, 5; Bicolored Blackbird, 4; Western Meadowlark, very numerous, 136 counted; Brewer's Blackbird, very numerous, 141 counted; House Finch, 11; Green-backed Goldfinch, 68; White-crowned (Gambel's) Sparrow, 6; Golden-crowned Sparrow, 15; Oregon Junco, 1; Thurber's Junco, 35; Samuel's Song Sparrow (heard), 1; Spurred Towhee, 8; Californian Towhee, 20; California Shrike, 5; Audubon's Warbler, 2; American Pipit, 32; Plain Titmouse, 4; California Bush-tit, 31; Ruby-crowned Kinglet, 10; Dwarf Hermit Thrush, 1; Western Robin, 4; Varied Thrush, 1; Western Bluebird, 2. Total, 33 species, 609 individuals (at minimum estimate).—MR. AND MRS. E. L. BICKFORD.

Cheney, Wash.—Time, 9.45 A. M. to 1.30 P. M. Foggy, ground bare; wind, east, light; temp., 26°. Batchelder Woodpecker, 1; Black-billed Magpie, 3; San Diego Red-wing, 34; Brewer Blackbird, 11; Redpoll, 29; Merrill Song Sparrow, 1; Slender-billed Nuthatch, 2; Oregon Chickadee, 21; Mountain Chickadee, 1. Total, 9 species, 102 individuals.—ROSWELL H. JOHNSON.

The Pine Grosbeak at Washington, D. C.

Since the matter on the preceding pages was put in type, we have received a number of interesting censuses which we should have been glad to print had they arrived in time for insertion in their proper places. We must make room, however, for a record of the Pine Grosbeak at Washington, D. C. (the most southern point from which the species has been recorded this season), by Mr. Thomas H. Levering, who writes that he satisfactorily identified three individuals of this species, a short distance outside the city limits, on November 26, 1903.

LONG-EARED OWL ON NEST WITH YOUNG
Photographed by L. S. Horton, at Hyde Hark, N. Y., May 17, 1903

The nest was in a maple tree about twenty-five feet from the ground. The picture was secured by fastening the camera in an ash, about six feet away, attaching sixty feet of tubing, and on the return of the parent Owl, making a 20-second exposure. While the camera was being removed the Owls vigorously attacked the intruder, coming to within three feet of his head, or, alighting on a near-by limb, with ruffled feathers and drooping wings, uttering a loud, cat-like mewing.

For Teachers and Students

Bird-Lore's Advisory Council

WITH some slight alterations and additions, we reprint below the names and addresses of the ornithologists forming BIRD-LORE'S 'Advisory Council,' which were first published in BIRD-LORE for February, 1900.

To those of our readers who are not familiar with the objects of the Council, we may state that it was formed for the purpose of placing students in direct communication with an authority on the bird-life of the region in which they live, to whom they might appeal for information and advice in the many difficulties which beset the isolated worker.

The success of the plan during the four years which it has been in operation fully equals our expectations; and from both students and members of the Council we have had very gratifying assurances of the happy results attending our efforts to bring the specialist in touch with those who appreciate the opportunity to avail themselves of his wider experience. Not only do students appeal to the representative of their own State, but in planning trips to other parts of the country the advice of the resident Councilor as to the best localities for birds, etc., is often sought.

It is requested that all letters of inquiry sent to members of the Council be accompanied by a stamped and addressed envelope for use in replying.

NAMES AND ADDRESSES OF MEMBERS OF THE ADVISORY COUNCIL

UNITED STATES AND TERRITORIES

ALASKA.—Dr. C. Hart Merriam, Biological Survey, Dept. of Agr., Washington, D. C.
ARIZONA.—Herbert Brown, Yuma, Ariz.
CALIFORNIA.—Charles A. Keeler, Calif. Acad. Sciences, San Francisco, Calif.
COLORADO.—Dr. W. H. Bergtold, 1460 Clayton Ave., Denver, Col.
CONNECTICUT.—J. H. Sage, Portland, Conn.
DELAWARE.—C. J. Pennock, Kennett Square, Pa.
DISTRICT OF COLUMBIA.—Dr. C. W. Richmond, U. S. Nat'l Mus., Washington, D. C.
FLORIDA.—Frank M. Chapman, American Museum Natural History, New York City.
FLORIDA, Western.—R. W. Williams, Jr., Tallahassee, Fla.
GEORGIA.—Dr. Eugene Murphy, Augusta, Ga.
ILLINOIS, Northern.—B. T. Gault, Glen Ellyn, Ill.
ILLINOIS, Southern.—Robert Ridgway, U. S. National Museum, Washington, D. C.
INDIANA.—A. W. Butler, State House, Indianapolis, Ind.
INDIAN TERRITORY.—Prof. W. W. Cooke, Biological Survey, Dept. of Agr., Washington, D. C.
IOWA.—C. R. Keyes, Mt. Vernon, Ia.
KANSAS.—Prof. D. E. Lantz, Manhattan, Kan.
LOUISIANA.—Prof. George E. Beyer, Tulane University, New Orleans, La.

MAINE.—O. W. Knight, Bangor, Me.
MARYLAND.— F. C. Kirkwood, Box 364, Baltimore, Md.
MASSACHUSETTS.—William Brewster, Cambridge, Mass.
MICHIGAN.—Prof. W. B. Barrows, Agricultural College, Mich.
MINNESOTA.—Dr. T. S. Roberts, 1603 Fourth avenue south, Minneapolis, Minn.
MISSOURI.—O. Widmann, Old Orchard, Mo.
MONTANA.—Prof. J. M. Elrod, University of Montana, Missoula, Mont.
NEBRASKA.—Prof. E. H. Barbour, University of Nebraska, Lincoln, Neb.
NEVADA.—Dr. A. K. Fisher, Biological Survey, Dept. of Agr., Washington, D. C.
NEW HAMPSHIRE.—Prof. C. M. Weed, State Agricultural College, Durham, N. H.
NEW JERSEY, Northern.—Frank M. Chapman, Am. Mus. Nat. History, New York City.
NEW JERSEY, Southern.—Witmer Stone, Academy Natural Sciences, Philadelphia, Pa.
NEW MEXICO.—Dr. A. K. Fisher, Biological Survey, Dept. of Agr., Washington, D. C.
NEW YORK, Eastern.—Dr. A. K. Fisher, Biological Survey, Dept. of Agr., Washington, D. C.
NEW YORK, Northern.—Egbert Bagg, 191 Genesee street, Utica, N. Y.
NEW YORK, Western.—E. H. Eaton, Canandaigua, N. Y.
NEW YORK, Long Island.—William Dutcher, 525 Manhattan ave., New York City.
NORTH DAKOTA.—Prof. O. G. Libby, University, N. D.
NORTH CAROLINA.—Prof. T. G. Pearson, Greensboro, N. C.
OHIO.—Prof. Lynds Jones, Oberlin College, Oberlin, Ohio.
OKLAHOMA.—Dr. A. K. Fisher, Biological Survey, Dept. of Agr., Washington, D. C.
OREGON.—A. W. Anthony, 761½ Savier street, Portland, Ore.
PENNSYLVANIA, Eastern.—Witmer Stone, Acad. Nat. Sciences, Philadelphia, Pa.
PENNSYLVANIA, Western.—W. Clyde Todd, Carnegie Museum, Pittsburg, Pa.
RHODE ISLAND.—J. M. Southwick, Museum Natural History, Roger Williams Park, Providence, R. I.
SOUTH CAROLINA.—Dr. Eugene Murphy, Augusta, Ga.
TEXAS, Northern.—J. J. Carroll, Waco, Tex.
TEXAS, Southeastern.—H. P. Attwater, Houston, Tex.
UTAH.—Prof. Marcus E. Jones, Salt Lake City, Utah.
VERMONT.—Prof. G. H. Perkins, Burlington, Vt.
VIRGINIA.—Dr. W. C. Rives, 1723 I street, Washington, D. C.
WASHINGTON.—Samuel F. Rathbun, Seattle, Wash.
WEST VIRGINIA.—Dr. W. C. Rives, 1723 I street, Washington, D. C.
WISCONSIN.—H. L. Ward, Public Museum, Milwaukee, Wis.
WYOMING.—Dr Mortimer Jesurun, Douglas, Wyo.

CANADA

BRITISH COLUMBIA.—John Fannin, Provincial Museum, Victoria, B. C.
MANITOBA.—Ernest Thompson Seton, 80 W. 40th street, New York City.
NEW BRUNSWICK.—Montague Chamberlain, 45 Milk street, Boston, Mass.
NOVA SCOTIA.—Harry Piers, Provincial Museum, Halifax, N. S.
ONTARIO, Eastern.—James H. Fleming, 267 Rusholme Road, Toronto, Ont.
ONTARIO, Western.—E. W. Saunders, London, Ont.
QUEBEC.—E. D. Wintle, 189 St. James street, Montreal, Can.

MEXICO

E. W. Nelson, Biological Survey, Department of Agriculture, Washington, D. C.

WEST INDIES

C. B. Cory, 160 Boylston street, Boston, Mass.

The Migration of Warblers

SECOND PAPER

Compiled by Professor W. W. Cooke, Chiefly from Data in the Biological Survey

With drawings* by Louis Agassiz Fuertes and Bruce Horsfall

PINE WARBLER

THE Pine Warbler seems to be the only United States Warbler that breeds at the southern limit of its range, so that its fall migration is a desertion of the northern part of its summer home and a concentration in the southern portion. The winter home is about one-third the area of the breeding range. The Pine Warbler is also the only Warbler breeding in the United States, no individuals of which regularly leave the United States in winter. The only records for this species outside of the United States are of a single, probably accidental, occurrence just over the borderline in Mexico, and of stragglers seen occasionally in the Bermudas.

SPRING MIGRATION

Atlantic Coast.—The species winters north to North Carolina and southern Illinois and the records of spring migration from this winter home are neither regular nor numerous, but the following notes on the arrival of the first birds will give a fair idea of the general movement:

Lynchburg, Va., March 30, 1901; Washington, D. C., average April 3; Renova, Pa., April 18, 1894; Englewood, N. J., April 18, 1900; Portland, Conn., average April 17; Durham, N. H., average April 26; Southwestern Maine, average April 20; Petitcodiac, N. B., May 19, 1887; Pictou, N. S., May 19, 1894; North River, P. E. I., May 2, 1889.

Mississippi Valley.—Nashville, Tenn., March 24, 1902; Bowling Green, Ky., April 20, 1902; Central Indiana, average April 25; Southwestern Ontario, average May 4; Ottawa, Ont., average May 17; St. Louis, Mo., April 21, 1883, April 16, 1888; Southwestern Iowa, average April 27; Lanesboro, Minn., average May 2; Aweme, Man., May 21, 1902. The most northern known extension is to Fort Carlton, Saskatchewan.

FALL MIGRATION

The last Pine Warbler seen at Aweme, Man., in 1902, was on September 2; the average of the last seen in southwestern Maine, is September 25, and the latest October 4, 1896. The earliest migrants reach Washington, D. C., the last week in August, and the rear guard passes central Indiana and Washington between October 10 and 20.

*The drawings are one-half natural size

HOODED WARBLER

SPRING MIGRATION

The winter home of the Hooded Warbler is in Central America from Vera Cruz, Mex., to Panama, whence the species reaches the United States by a flight across the Gulf of Mexico, avoiding the West Indies and (for the most part) southern Florida.

PLACE	No. of years' record	Average date of spring arrival	Earliest date of spring arrival
Atlantic Coast—			
Northern Florida	6	March 28	March 19, 1885
Southeastern Georgia	3	April 4	March 29, 1902
Atlanta, Ga. (near)	9	April 10	April 3, 1902
Raleigh, N. C.	14	April 18	April 10, 1893
Asheville, N. C. (near)	7	April 19	April 12, 1893
Lynchburg, Va.	4	April 29	April 23, 1900
West Virginia	7	April 17	April 20, 1891
Washington, D. C.	3	May 2	May 1, 1903
Englewood, N. J.	7	May 4	May 2, 1897
Renova, Pa.	4	May 13	May 10, 1901
Mississippi Valley—			
New Orleans, La.	10	March 22	March 13, 1897
Southern Mississippi	3	March 30	March 22, 1902
Helena, Ark.	7	April 11	April 3, 1898
Eubank, Ky.	7	April 14	April 8, 1890
St. Louis, Mo.	6	April 23	April 17, 1883
Central Indiana	6	April 29	. . . . .
Keokuk, Ia.	5	May 10	May 5, 1898

The Hooded Warbler has also been taken at Chicago, Ill., April 28, 1884, and May 3, 1895; at Grinnell, Ia., May 18, 1888, and once in southern Minnesota. The Texas dates are at Refugio county, March 30, 1898, March 13, 1899; San Antonio, March 31, 1890, April 7, 1894; Bee county, April 3, 1886, April 10, 1887.

FALL MIGRATION

The fall migration is hardly in full swing before the latter part of August. The earliest dates at Key West, Fla., are August 30, 1887, and August 19, 1889; at Truxillo, Honduras, September 26, 1887, and in southeastern Nicaragua, September 24, 1892. The bulk leave the northern breeding-grounds by the middle of September and the last have been noted at Renova, Pa., September 26, 1900, October 13, 1903; Beaver, Pa., September 25, 1890, October 3, 1891; Englewood, N. J., September 15, 1886; Washington, D. C., September 15, 1890; French Creek, W. Va., September 29, 1892; Lynchburg, Va., October 10, 1899; Raleigh, N. C., October 1, 1891; Asheville, N. C., September 20, 1890; Sedam, Ind., October 5, 1893; Brownville, Ind., October 20, 1884; Eubank, Ky., September 29, 1889; New Orleans, La., October 19, 1895 and 1897, October

1. Pine Warbler, Adult Male.
2. Pine Warbler, Female.
3. Red-faced Warbler, Adult Male.
4. Red-faced Warbler, Female.

25, 1899. The latest record for the United States is the — probably accidental — occurrence of this species at Germantown, Pa., November 19, 1887.

CHAT

The summer home of the Chat extends from the Atlantic to the Pacific. The species has been separated into an eastern and a western form, and in the following tables, the notes for Colorado and the Pacific Coast refer to the western form (*Icteria virens longicauda*), the rest to the eastern (*Icteria virens*).

SPRING MIGRATION

PLACE	No. of years' record	Average date of spring arrival	Earliest date of spring arrival
Atlantic Coast—			
Savannah, Ga.	3	April 17	April 14, 1902
Atlanta, Ga. (near)	8	April 21	April 16, 1894, 1895
Southeastern South Carolina	5	April 25	April 19, 1887
Raleigh, N. C.	16	April 23	April 18, 1888
Asheville, N. C. (near)	6	April 26	April 21, 1891
Variety Mills, Va.	17	April 29	April 18, 1896
White Sulphur Springs, W. Va.	5	May 2	April 29, 1897
French Creek, W. Va.	5	May 1	April 26, 1893
Washington, D. C.	7	May 1	April 29, 1888
Beaver, Pa.	4	May 2	April 29, 1890
Berwin, Pa.	5	May 9	May 6, 1902
Renova, Pa.	8	May 8	May 5, 1894, 1895
Englewood, N. J.	7	May 9	May 5, 1886
Portland, Conn.	4	May 13	May 8, 1894
Cambridge, Mass.	..	....	May 15
Mississippi Valley —			
New Orleans, La.	5	April 19	April 13, 1899
Southern Mississippi	5	April 18	April 17, 1890
Helena, Ark.	7	April 22	April 16, 1896
Eubank, Ky.	11	April 23	April 19, 1889
St. Louis, Mo.	6	April 24	April 21, 1885
Brookville, Ind.	6	April 30	April 26, 1886
Petersburg, Mich.	..	....	May 3, 1894
Chicago, Ill.	3	May 16	May 10, 1897
Rockford, Ill.	5	May 17	May 12, 1889
Keokuk, Ia.	10	May 3	April 28, 1896
Hillsboro, Ia.	5	May 1	April 26, 1897
Indianola, Ia.	4	May 7	May 4, 1902
Grinnell, Ia.	5	May 6	May 1, 1887
Iowa City, Ia.	5	May 5	May 2, 1891
Western United States—			
Fort Brown, Texas	4	March 30	March 26
San Antonio, Texas	5	April 10	April 5, 1890
Northern Texas	6	April 19	April 16, 1886
Onaga, Kans.	11	May 4	April 26, 1896
Southeastern Nebraska	7	May 6	April 29, 1886
Denver, Colo.		May 2	April 20, 1897
Southern California	4	April 18	April 5, 1885
Central California	5	April 22	April 14, 1885
Oregon	5	May 14	May 4
Chelan, Wash.	..	....	May 28, 1896

FALL MIGRATION

The Chat migrates early. It deserts the northern limit of its range in August and by the first of September few are left north of 39° latitude. Some dates of the last noted are at Englewood, N. J., August 29, 1885; Renova, Pa., September 21, 1897; Berwyn, Pa., September 2, 1898; Washington, D. C., September 19, 1886; Raleigh, N. C., September 1, 1888; Brookville, Ind., September 7, 1886; Bicknell, Ind., September 27, 1894; Chicago, Ill., August 16, 1895; Hillsboro, Ia., September 4, 1898; Onaga, Kan., September 21, 1897; New Orleans, La., September 12, 1899; Bonham, Tex., September 20, 1889.

RED-FACED WARBLER

This species ranges from the highlands of Guatemala northward to the mountains of New Mexico and southern Arizona. No migration notes are available.

A Letter from Professor Cooke

Editor Bird-Lore:

Noticing the article in the last number of BIRD-LORE on the migration of the Redstart, one of your subscribers has kindly sent me the dates of arrival of this bird as noted by him for *twenty-five* consecutive years. I am not only grateful to him, but I shall greatly appreciate any and all Warbler migration notes that your readers may contribute.

WELLS W. COOKE.

Biological Survey, Washington, D. C.

Bird - Lore's Colored Plates

We have received a great many letters cordially praising the first colored plates in BIRD-LORE'S series of illustrations of the North American Warblers. It has been quite impossible for us to acknowledge their receipt, but we assure their writers that they are none the less welcome and that we expect the remaining plates of the series will be even better than those which have already appeared.

The Audubon Calendar for 1904

The Calendar for 1904 issued by the Massachusetts Audubon Society is by far the most attractive of the series thus far prepared by this society. It figures six species of Warblers, and the reverse of each plate is occupied with descriptive text.

The calendar may be procured from the Massachusetts Society at the Boston Society of Natural History.

For Young Observers

Notes on Winter Birds

PRIZE ESSAY

By ORREN W. TURNER (aged 14 years), Tarboro, N. C.

ONE evening on Friday, December the eleventh, while strolling along on the edge of a wood, my attention was attracted by a flutter almost under my feet and as I looked down a little Chipping Sparrow which I had nearly stepped on, flew up. But he did not fly far, however, for I saw he was wounded. He tried to alight on a limb but he was so weak that he could not sit upon the limb so he had to fly on the ground.

He made no resistance when I tried to catch him. When I began to examine him to find his wound, he began to scream and flutter so I sat down beside a stump so that I could examine him gently.

His screams had attracted many birds, for thirteen Partridges (Bob-whites) came down beside the fence, and there were seven Jays, four Brown Thrashers, eleven Towhees, sixteen Chipping Sparrows and about twenty-five White-throated Sparrows or Peabody Birds, all of which began to scream and scold at me.

I noticed a Red-headed Woodpecker which kept flying around me as if trying to defend the stump or the Sparrow.

To my surprise I found a large dog-tick which had taken up his winter quarters on Chippy's neck and was eating his life away. When I pulled the tick off, Chippy gave a cry and fainted away and I thought that he was dead, but he slowly recovered.

While I was sitting beside the stump, I noticed that the latter had many holes in it and one especially which was larger than the others, attracted my attention. The hole was about as big as a dollar and it had a piece of oak bark stuck in it.

I thought I would examine the hole so I set Chippy under my hat. By this time all the birds had quit the trees near me, but the Woodpecker never ceased to make attacks at me. In the hole I found 58 acorns and two hickorys so I searched the old stump over and in all I found 136 acorns and three hickorys. Some of the acorns just fitted the holes and were pegged tightly with pieces of bark. I put all of the acorns back just as I found them and carried Chippy home.

I gave him some suet and oats and crumbs of bread and wrapped him up in some cotton. In two days Chippy could fly a little way but I thought I would keep him until he was perfectly strong.

On December 14, I returned to the old stump beside the wood and to

my surprise not an acorn or hickory could be found! I was very sorry to think that I had made the Woodpecker move his acorns which he had stored for winter. But three days later I returned to the stump and the Woodpecker had replaced 63 of the acorns. About two days after I returned to find 103 acorns and one hickory. I have found many stumps with acorns in them but never before have I found so many in one stump. I did not know that Red-heads ate hickorys but I think that he carried them there for they were mixed in with the acorns.

As for Chippy, he is flying around with the English Sparrows but he knows where to go when he is hungry and sleepy. Why he just goes to his box where it is filled with oats, crumbs, suet and grass-seed. One morning I set the box out on the piazza and Chippy brought an English Sparrow with him to dine but as Mr. Sparrow was afraid to go in that slab cage, Chippy brought him some crumbs and oats outside.

He is now well and strong and I hope he will continue to stay with me.

The Prize Essay

The prize for the best article on winter bird-life by a young observer of fourteen years or under, has been awarded to Master Orren W. Turner, of Tarboro, North Carolina, whose essay is printed in this number of Bird-Lore.

A Prize Offered

In order to encourage careful observation and description on the part of our readers of fourteen years and under, we offer three prizes for the best four- or five-hundred-word article on the bird-life of February. Let each Young Observer keep a record of what he sees during this month and on March 1 write his article and send it to the editor at Englewood, N. J.

The first prize offered is a book or books to the value of two dollars and a half; the second, a book or books to the value of one dollar and a half, and the third prize is a Bird-Lore Bird-Chart and a Field Identification Blank.

Book News and Reviews

KEY TO NORTH AMERICAN BIRDS . . . . with which are incorporated General Ornithology: An Outline of the Structure and Classification of Birds; and Field Ornithology, a Manual of Collecting, Preparing and Preserving Birds. Fifth Edition, entirely revised. By ELLIOTT COUES. Boston: Dana Estes & Co., 1903. Two volumes, royal 8vo. xli + 1152 pages, 747 black and white illustrations in the text two full-page colored plates.

The fifth edition of this great work appears in two volumes, but otherwise resembles in form the second to fourth editions. The Historical Preface and Part I, Field Ornithology, are evidently printed from the plates used in former editions; Part II, General Ornithology, is unchanged, save for the addition of some material chiefly in relation to the colors of feathers (pp. 88, 92), in which we regret to see that the now exploded theory of repigmentation of a fully grown feather is given credence.

We cannot believe that Dr. Coues intended this part of the Key to go to press without at least some reference to the numerous important contributions to our knowledge of avian anatomy which have been made since the text originally appeared in 1884.

It is in Part III, Systematic Synopsis of North American Birds, that the principal changes from the old Key will be found. This appears to have been recast to conform in the main to the nomenclature of the A. O. U. 'Check-List', but the order of arrangement differs, the Thrushes standing at the beginning instead of at the end of the list.

There is additional general matter here, as well as descriptions of forms not included in earlier editions, and to these descriptions are usually added the more important references concerning the bird under consideration — an exceedingly helpful feature. There are also more common names given; but where these are not in use, as they are for certain wild-fowl, for example, it would seem more desirable to ignore them and give only the name appearing in the A. O. U. 'Check-List'. The latter, it may be noted, is often wanting, and we miss also the A. O. U. serial numbers, the absence of which will prove an inconvenience in a variety of ways.

It is in the illustrations that the new Key will be found to differ most strikingly from its predecessors. Not only are many of those which have seen service in numerous books very properly discarded, but a great number of new cuts have been introduced. These are, in the main, by Mr. Fuertes, who made them especially for this work. It is needless to say that they are spirited and life-like pictures of the birds they portray, and we wish we could say that they had been adequately reproduced; but in 'silhouetting' or 'routing out' the half-tone plate the outline of the bird has often been marred, while the attempt to use half-tones in the text on a soft-finish paper has met with the usual failure. Comparison of cuts from the old Nichols wood-engravings, with their clear gradations and satisfactory definition, with these muddy, clogged half-tone prints illustrates only too forcibly how impossible it is to get satisfactory results from half-tones on anything but coated or calendared paper.

The task of seeing these volumes through the press fell to the lot of Mr. J. A. Farley, and in view of the numerous difficulties and complications which, of necessity, are encountered in editing a posthumously published manuscript, it must be said that he has done his work remarkably well. Slips there are here and there, as, for example, the captions to cuts Nos. 461 and 684, in which the Sharp-shinned Hawk and Marbled Murrelet are called respectively "Pigeon Hawk" and "American Herring Gull, Young." But these are of minor importance when one considers the opportunities for error in printing a work of this kind. Mr. Farley adds a table of the additions to the list of North American

Putnam: This is going to go firstrate; I am much pleased with the out look. But better send me hereafter in galley-slips first; ornithology is progressive, and though I took down many or most doubtful species in the MSS. other reductions will be expedient, for instance in this sig. I reduce to var. 3 "species" I formerly allowed to stand with doubt. It will save trouble & expense to give me proofs before making up.

SYSTEMATIC SYNOPSIS

The "Key" has at last got into admirable shape!

OF

NORTH AMERICAN BIRDS.*

If you think it will save anything I will go over the MSS. again, if you send it to me

Subclass I. AVES AËREÆ, or INSESSORES.

AERIAL BIRDS, or PERCHERS.

The first and highest one of three primary divisions of the class† *Aves*, embracing all existing birds down to the *Gallinæ*.

The knee and part of the thigh are free from the body, and the leg is almost always feathered to or beyond the tibio-tarsal joint. With rare exceptions, the toes are all on the same level, and touch the support throughout; being thus fitted for grasping or *perching*. In other respects the members of this great group are too various to be defined by external characters, unless it be negatively, in the absence of the features of the other two. They are *Altrices*. They are now usually divided into *five* Orders, of which the first is the — groups — special

Order PASSERES. Perchers Proper.

The feet are perfectly adapted for grasping by the length and low insertion of the hind toe, great power of opposing which to the front toes, and great mobility of which, are secured by separation of its principal muscle from that that bends the other toes collectively. The hind toe is always present, and never turned for- — p. 12

* North of the present Mexican Boundary; inclusive of Lower California, exclusive of Greenland.

† As commonly received, without recognizing, however, the fossil *Archæopteryx* (see Introd.) a mesozoic bird, which probably alone represents a primary group *Saururæ*; admitting which, some high authorities then divide all existing birds into two other primary groups, *Ratitæ* (Ostriches), in which the sternum has no keel, and *Carinatæ*, embracing all other birds. On this basis, our *Aves aëreæ* would represent a group of less value than a subclass, and I desire to be understood as using this term provisionally, in a conventional sense.

Reproduction (slightly reduced) of Dr. Coues' proof of page 69 of the first (1872) edition of his 'Key to North American Birds.' From the original in the possession of Dr. J. A. Allen.

TURDIDÆ, THRUSHES.—Gen. 1.

whitish; eyelids, postocular stripe, 2 wing-bars and much edging of quills, orange-brown; bill dark, feet pale; ♀ and *young*, duller, browner, pectoral bar obscure, etc. Size of the last. Pacific slopes, N. Am.: accidental in Mass., N. J. and Long Island. AUD., iii, 22, pl. 143; BD., 219, . . . NÆVIUS.

FIG. 14.

○ Spotted, not banded, below. (Subgenus *Hylocichla*.)

† Upper parts not uniform in color.*

‡ Upper parts tawny, shading into olive on rump.

Wood Thrush. Under parts white, barely or not buff-tinted, marked with large distinct dusky spots, middle of throat and belly only immaculate; bill dusky and yellowish; legs flesh-color; 7–8 long; wing 4–4¼, tail 3–3¼. Eastern United States. WILS., i, 35, pl. 2; NUTT., i, 343; AUD., iii, 24, pl. 144; BD., 212, ... MUSTELINUS.

‡‡ Upper parts olive, shading into rufous on rump and tail.

Hermit Thrush. Under parts white, with slight buffy tint anteriorly and olive shade on sides, breast and sides of throat thickly marked with large distinct dusky spots. About 7 long; wing 3½, tail 2¾. Eastern (and Arctic) North America. WILS., v, 95, but *not* his fig. 2 of pl. 45; NUTT. i, 346; AUD., iii, 29, pl. 146; BD., 212, ... PALLASII

Var. *auduboni*, is entirely similar, rather larger. South-west United States into Mexico. BD., Rev. 16.

Var. *nanus*, is entirely similar, rather smaller. Rocky Mountains to [illegible]. AUD., iii, 32, pl. 147; BD., 223; Rev., 16; COOP., 4.

†† Upper parts uniform in color.*

Upper parts olive.

Olive-backed Thrush. Under parts white, olive-shaded on sides, the fore parts and sides of head and eyelids strongly tinged with buff, the breast thickly marked with large dusky-olive spots. 6¾–7¾ long; wing 3½–4, tail 2¾–3. North America, except perhaps south-west U. S. WILS., v, pl. 45, f. 2, but not his description on p. 95; BD., 216, . . . SWAINSONII.

Var. *aliciæ*. Similar; but without any buffy tint about head, nor yellowish ring around eye; *averaging* a trifle larger, with longer, slenderer bill. Much the same distribution. BD. 217, and Rev. 21.

Upper parts tawny.

* *Very young birds of all the species of Hylocichla are spotted above, but these spots disappear the first autumn, and the ground-color is always streaked.*

Reproduction (slightly reduced) of Dr. Coues' proof of page 72 of the first (1872) edition of his 'Key to North American Birds.' From the original in the possession of Dr. J. A. Allen.

birds and changes in nomenclature which have been made since Dr. Coues' death in 1899.

It is unnecessary for us to offer general comment on a work which we have before characterized as, beyond comparison, "the best known on general and systematic ornithology ever published," and we have aimed here only to note the differences between the last and the preceding editions. —F. M. C.

BIRDS OF A MARYLAND FARM; A LOCAL STUDY OF ECONOMIC ORNITHOLOGY. By SYLVESTER D. JUDD, Ph.D. Bull. No. 17, Div. Biological Survey, U. S. Dep't of Agriculture, Washington, 1902. 116 pages, 17 plates, 41 text-cuts.

Dr. Judd's study of the food of birds on a farm of 230 acres, of which 150 were under cultivation, extended over a period of seven years and is of unusual value, not alone because of the results obtained, but also as an admirable object-lesson in the methods of investigation employed by the modern economic ornithologist. It has, too, much ecologic interest purely as a contribution to our knowledge of the economic relations of birds to a definite environment. It may well stand as a model for work of this kind, and an examination of it will suggest numerous lines of observation to students of the food of birds. Particularly, we would commend Dr. Judd's fairness of mind. He does not appear as a special pleader for this bird or that, but evidently presents his conclusions without attempting to defend one bird and condemn another, influenced by a preconceived fondness or prejudice for the species in question.—F. M. C.

TWO LITTLE SAVAGES: BEING THE ADVENTURES OF TWO BOYS WHO LIVED AS INDIANS AND WHAT THEY LEARNED. With over 300 drawings. By ERNEST THOMPSON SETON. 1903. Doubleday, Page & Co. New York. 12mo. 552 pages.

This is not a 'bird book,' although it has much in it about birds, but it teaches the lesson of the beauty of life out-of-doors, of which the birds, after all, are only a part, even if a very important one; and it is, therefore, a book which should be considered by every one who would lead the world to that well of pure delight, of which the author writes so briefly but so eloquently in his two-line preface.

Into this attractive volume Mr. Seton has crowded the results of his years of experience in the woods. It is, we believe, no secret that the story is largely autobiographical, and in reading it one realizes how well its writer's training has fitted him for the work he has made his own.—F. M. C.

CATALOGUE OF CANADIAN BIRDS. Part II. Birds of Prey, Woodpeckers, Flycatchers, Crows, Jays and Blackbirds. By JOHN MACOUN, M.A., F.R.S.C. Geological Survey of Canada. Ottawa, 1903. 8vo. Pages i–iv + 219–413.

THE BIRDS OF OHIO. By LYNDS JONES, M.Sc. (Oberlin College). Special Paper, No. 6. Ohio State Academy of Science. 1903. 8vo. 241 pages, 1 map.

THE BIRDS OF WISCONSIN. By L. KUMLIEN and N. HOLLISTER. Bull. Wis. Nat. Hist. Soc., Vol. II (new series), Nos. 1, 2 and 3. Published with the Coöperation of the Milwaukee Public Museum. 1903. 8vo. 143 pages, 8 half-tone plates.

THE BIRDS OF FERGUS COUNTY, MONTANA. By P. M. SILLOWAY. Bull. No. 1, Fergus County Free High School, Lewistown, Mont. 1903. 8vo. 77 pages, 17 half-tone plates.

Here are four noteworthy contributions to the literature of faunal ornithology. The scope of Mr. Macoun's work has been outlined in our notice of Part I (BIRD-LORE, II, 125), and it is necessary only to say here that the high standard of the first volume has been maintained. This important publication will be concluded with Part III, which is promised for the coming fall.

Professor Jones has been so long in close touch with the birds and bird students of Ohio, and is so directly responsible for much of the interest in ornithology in that state, that assuredly no one is better fitted than he to write on the status of Ohio birds. It is, consequently, almost needless to say that his fully annotated list is thoroughly satisfactory and workmanlike. It enumerates 322 species and subspecies as "actually recorded in the state."

The list of the late Mr. Kumlien and of Mr. Hollister includes 357 species and subspecies, with more or less extended annotations concerning their manner of occurrence and dates of migration. It should prove a most serviceable hand-list of Wisconsin birds.

Mr. Silloway's 'Birds of Fergus County, Montana,' is, in fact, a handbook of the birds of this region. It gives information in regard to the distribution, migration and nesting of the birds treated, as well as brief descriptions which should permit one to identify them. Copies of this useful publication, we note, may be obtained by application to the author at the Fergus County High School, of Lewistown, Montana. The trustees of this institution are thus to be congratulated not only on publishing an excellent treatise but on making it available to the public without charge.—F. M. C.

The Ornithological Magazines

THE CONDOR.—With the November-December number 'The Condor' completes its fifth year and, with one exception, the largest volume in its history. The leading article is by E. W. Nelson and contains an interesting series of 'Notes on the Mexican Cormorant,' made chiefly in the vicinity of Lake Chapala, Mexico, and illustrated with five half-tones. This Cormorant seems to be chiefly a fresh- or brackish-water species and ranges from Central America north to southern Illinois. A suggestive paper on 'The Use of Sentinels by Valley Quail,' by Williams, shows how much still remains to be learned about the habits of comparatively well-known birds. 'Notes on the Texan Jay' are contributed by Howard Lacy, and on 'The Rocky Mountain Screech Owl' by W. L. Burnett.

Local lists are represented by the concluding part of Osgood's 'List of Birds Observed in Cochise County, Arizona,' and Anderson's and Jenkin's 'List of Birds from the Santa Cruz Mts., California.' The list of birds peculiar to Santa Cruz Island is increased by the description of a new species, *Vireo maailliardorum*, Grinnell. Two pages of 'Correspondence' are devoted to a continuance of the discussion of the bonding feature of the A. O. U. Model law by Dr. J. A. Allen, E. W. Nelson and the Editor. An improvement has been made in the index, which has been consecutively paged and prepared for binding at the end of the volume, where it properly belongs; but no table of contents or list of illustrations is furnished with the title-page,—an omission which we hope to see supplied in future volumes.—T. S. P.

WILSON BULLETIN.—With Number 45 the 'Wilson Bulletin' completes the fifteenth volume of a series which began soon after the organization of the Wilson Chapter in 1888, and which includes a large amount of valuable ornithological material.

In an editorial *résumé* the editor touches on the value and pleasures of field work, and suggests that any one having even a limited chance for observation may make a careful study of a few birds. He very properly expresses a wish that in these studies the birds will be considered as such, and not as beings possessed of human attributes and motives. This desire for reform is most welcome and timely, judging from the increasing number of misguided or designing enthusiasts who are inclined to discover human characteristics in birds and mammals and who are filling the book-shelves with misleading trash at the expense of trustworthy and valuable material.

Lynds Jones, under the title of 'A Bob-white Covey,' gives an interesting and valuable account of the formation of the roosting circle of a covey of Bob-whites as described by Robert J. Sim, of Jefferson, Ohio. In 'A List of Birds Seen in Franconia, N. H., and Vicinity During August and September 1903.' H. E. Porter and others noted 84 species of birds, 11 of which were not mentioned by Faxon and Allen in their paper in 'The Auk' of 1888. These observers, however, recorded 13 species not found by the party in 1903.

Besides a number of general notes, this issue of the 'Bulletin' contains the following short papers: 'Bachman Sparrow' selected from Dawson's 'Birds of Ohio,' 'A December Hermit Thrush,' and 'Black Skimmers at Woods Holl, Mass.,' by Lynds Jones.—A. K. F.

Bird-Lore

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OFFICIAL ORGAN OF THE AUDUBON SOCIETIES
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Bird-Lore's Motto:
A Bird in the Bush is Worth Two in the Hand

A Question of the Day

INTEREST in animals is now popularly aroused by emphasizing our kinship with the lower forms of life, and the manifestations of animal instinct and of human intelligence often so closely resemble one another that it requires an effort on the part of the sympathetic but conscientious student to avoid using his own mind as a standard when attempting to interpret the meaning of an animal's actions.

In an increasing number of magazine articles and so-called 'nature' books, the effort to resist the temptation to write of animals as though they were endowed with the mind of man entire has clearly not been made, and the result is a rapidly growing mass of natural-history fiction presented in the guise of fact.

While the writers of this class no doubt awaken much interest in animal life, it is not a healthy interest. It is based on false premises and unwarranted assumptions. Lacking the special training without which even the best observers are not justified in drawing conclusions, these writers enter the difficult field of comparative psychology and in almost every paragraph confidently put forward, as uncontrovertible facts, statements about the habits of animals for which there is absolutely no psychological foundation.

Throughout the world of science today, trained minds are patiently and skilfully studying the animal mind. Thousands of minute exhaustive experiments are being made. Conclusions are drawn with the utmost caution and are presented to the world tentatively for criticism and as representing only a stage in our investigations of the development of mind in animals.

Compare the careful studies and conservative statements of those fully equipped investigators with the crude observations, vague memories and unsubstantiated anecdotes of the various campers, hermits, paddlers *et al* who are now posing as authorities on the habits of our birds and animals and the nature of their mental attributes. As a matter of fact, these pseudo-scientists are about as well prepared to discuss the problems of comparative psychology as the average kodaker is to explain the chemistry and optics of photography.

From the scientist's point of view, the greatest harm wrought by this unnatural history is not only the wholly wrong impression it conveys of our exact knowledge of the animal mind, but the consequently misguided efforts of students who have opportunity to make observations which might be of great value. Accepting as true the humanization of the animal, they study its actions as they would those of a fellow-man, and unconsciously attribute to them a significance they are not *known* to possess.

The science of comparative psychology is as yet in its infancy. It has need of the services of every competent observer. Particularly in our study of the life-histories of birds do we need an immense amount of data before we may hope to penetrate the workings of the bird-mind, and say with some approach of confidence, "This is instinct," or "This is intelligence." Do not, therefore, let us rush ahead, led astray by imaginative even if honest writers, but let us be sure of one foothold before we make the next step.

The *true* story of the activities of the animal mind will be found to be marvellous enough when once we know it.

The Audubon Societies

"You cannot with a scalpel find the poet's soul,
Nor yet the wild bird's song."

Edited by MRS. MABEL OSGOOD WRIGHT and WILLIAM DUTCHER

Communications relating to the work of the Audubon and other Bird Protective Societies should be addressed to Mrs. Wright, at Fairfield, Conn. Reports, etc., designed for this department should be sent at least one month prior to the date of publication.

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"Keep on Pedaling!"

Ten years ago, when the world and his wife were striving to master the vacillating bicycle, the constant cry of the perspiring instructor who ran beside was, "Keep on pedaling; if you stop you're a goner!"

This concise if inelegant advice applies to many things besides wheeling—and especially to the work of bird protection. At the present moment thirty-odd Audubon Societies are more or less securely mounted and started upon the right road; but if, in addition to "keeping on pedaling," they do not look both right and left as well as ahead, an upset will speedily follow.

We are all prone to overestimate the importance of initial effort, whether it be in mastering a horse, a wheel, or in organizing a new movement. Of course, in order to have a coöperative society there must be organization, but the organization should be regarded only as a platform upon which the members may stand united to work intelligently for reaching an end, not as the end itself.

When you often hear some one say, "Oh, yes, birds are being protected in our state,

there is nothing to worry about there; we have just started an Audubon Society," as if a declaration was all that was necessary, you will understand the necessity of the injunction to "keep on pedaling."

As the societies have, for their motto, The Protection of Birds, so, if they would work with any hope of success, they must stand upon one platform, Public Education, and public education is something that is as endless as the race itself. It is true that public education in a general sense has obtained long enough in this country to be regarded as an inalienable right; but until the lesson of protection of all forms of harmless and useful animal life is so well learned as to become part of the heredity of coming generations, any relaxing in vigilance in the different branches of protection will be fatal to the whole cause; and for this reason every society should have special committees ever on the watch for pitfalls.

In every community there are people, both men and women, equally interested in the cause of protection, of widely different intellectual gifts and degrees of tact; upon the wise sifting and classifying of these may depend the whole success of the local organization.

The committee on Bird Study in Schools should be composed of people of both sexes who not only have a knowledge of the child-mind, but of the amount of work already obligatory in the different grades; then less fault will be found with teachers for "not showing interest" and greater results will follow.

The Legislative Watch-Out Committee should be composed of the shrewdest men available, with a knowledge of state politics. If one is a lawyer all the better; he may save the rest from running their heads into legal nooses at times when they most need them. A good committee of this sort will often engage the interest of many men who would otherwise see no work for themselves in an Audubon Society, not appreciating the value of a promise "not to wear the feathers of song-birds for decorative purposes."

On the other hand, a large mixed body—drawn from widely different corners, the more so the better, can be organized under the head of Committee for the Posting of the Laws. This vast work cannot be done by a few, and the work rivals in importance the making of the laws themselves; but if fifty or one hundred persons in each state could be relied on to undertake the matter, these in turn may employ local help until the chain is complete. How much more interesting would be the oftentimes perpunctory annual meeting if these three before-mentioned committees brought in full reports!

One of the beauties of a progressive country is that where everything moves nothing can be fixed; it must either go forward, backward, or drop out. Part of legal prerogative is that any legislative session may untie the knots made apparently firm by another, so the Watch-Out Committee must be never-ending.

As any legislative session may change a law, so is the work of the Committee on Posting Laws unending.

As it is to be hoped that children will not cease to be born, so must the work of the Educational Committee be unending.

As we hope that bird-life may never be extinct, on our continent, at least, so must the work of the Audubon Societies be perpetual.

All cheer for 1904, good friends; hold your handle-bars firmly, mind sharp—legislative—curves, and, above all, "keep on pedaling."—M. O. W.

National Committee Notes

By the Chairman

Some persons seek work and some have work thrust upon them; this is another case of the lady or the tiger. We have an ambition, as chairman of the National Committee, to see our official organ, Bird-Lore, increase its circulation from the present small issue to at least 100,000 copies of each number! When this happy time arrives the propagandist can feel that the principles of bird protection have taken firm root in the hearts of the people and the ephemeral stage has passed away forever. However,

before this bright vista will be near enough for us to enjoy it as a part of the present, there is much hard work for all the bird lovers and Audubonites, old or young, to do. The question is, will the readers of BIRD-LORE sit idly by and wait for some one else to till the fallow ground, or will they do their own part in building up this great structure? This is a serious matter and one that should be taken to heart by every one that loves nature. There is, as a nucleus or foundation for this great movement, forty organized Audubon Societies, with nearly a hundred thousand members, the larger part of which are children, who, at the present time, can give but little financial support, but are being taught the basic principles of Audubon work. In a few short years these children will be the men and women who will support and carry on the work that is now being initiated.

The importance and magnitude of Audubon work warrants its being placed in a position of permanence; this can be accomplished quickly and easily by incorporation. The act of incorporating is a simple matter, and, as Audubon work is national in its scope, it seems proper that the place of incorporation should be Washington, D. C.

The National Audubon Committee, composed as it is of one delegate from each regularly organized Audubon Society, will then be in a position to appeal to the bird-loving public for a much-needed endowment fund. This fund should be raised by a popular subscription from bird lovers in all parts of the country. No subscription will be too large and none too small to be thankfully received. Objects no more worthy nor half as economically important are endowed with hundreds of thousands of dollars; why not the Audubon movement, which has for its sole object the preservation of the wild birds of the country? Think of a birdless world,—no song, no bright plumages, and no check to insect pests! This is another stone in our great building; Audubonites! are you willing to help lift it in place? Let the chairman hear from you with pertinent suggestions and promises of aid. So much for permanent work.

At the present time it is important that every reader of BIRD-LORE and every Audubon Secretary and Local Secretary should take immediate steps to create public sentiment against the use of the aigrette. Educational Leaflet No. 7, which appears in the present issue of BIRD-LORE, gives all the facts necessary to show how pressing the matter is if the white Herons are not to become exterminated. Let every woman who is still willing to wear a Heron's plume have a personal appeal made to her better nature; right must triumph in the end. Spread this leaflet, with its appeal to motherhood, broadcast over the country. Colored slides have been prepared of the five half-tones in the leaflet, which will be sent on application to all the societies that have traveling bird lectures. These and the leaflets will do much to reduce the sale of aigrettes and stub plumes.

The second attempt to secure a satisfactory non-game bird law in Louisiana has just been defeated.

Owing to the scare occasioned by the rapid march of the boll-weevil pest from Mexico through Texas to the borders of Louisiana, the Governor of the latter state called a special session of the legislature late in December to devise means for preventing the boll-weevil scourge from spreading into that commonwealth. Among the plans discussed was a law to prevent the killing or caging of birds.

A bill was prepared, introduced and was adopted in the House of Delegates by a vote of 73 to 9. To the very great credit of the members, it is reported that the speeches made in behalf of the bill were very earnest in favor of bird protection. The bill was defeated in the Senate by a political trick.

Among the most active antogonists to the passage of this much-needed legislation were the representatives of the caged-bird dealers. Bird lovers in Louisiana, and especially the cotton-planters, who have so much at stake, should at once take active steps to create public sentiment in the state in order that at the next session of the legislature the agricultural interests of the whole state should not be set aside by the paltry interests of less than half-a-dozen men who

are engaged in caging valuable insectivorous birds to export for their pecuniary gain. Louisiana has over $140,000,000 invested in agriculture; why should this enormous moneyed interest be jeopardized by a few men whose entire invested capital probably does not amount to $10,000?

The New Jersey Audubon Society is making a determined effort to prevent the passage of a law permitting the killing of Robins by fruit-growers, and calls for the assistance of all bird-lovers.

The annual report of the Chairman of the National Committee is now ready for distribution. It gives in detail the status of Audubon work, legislation and warden service in the United States. All the Audubon Societies are urged to circulate this report liberally, as it cannot fail to do good. It is especially important that every local secretary should have a copy at the earliest possible date, in order that they may know what is being done in other sections of the country.—W. D.

Bird Protection Abroad—III. New Zealand

By T. S. Palmer

(Concluded from Vol. V., No. 5, p. 174)

The amendments to the New Zealand Act of 1880 are nearly all brief. In 1881 authority was given the colonial secretary to issue permits to persons to destroy game injuring crops on their own lands. In 1884 rangers were granted the powers of constables, with authority to seize guns, nets, or any devices used in capturing game contrary to law. Under the Amendment Act of 1886 all game is to be considered as imported game without requiring proof of the fact of importation. The Amendment Act of 1889 prohibited the use of guns larger than No. 10 bore, required licenses for sale of native game, and a record of all sales of game, fixed an open season for Godwits during February, March and April, and required acclimatization societies to file annual statements of their accounts with the colonial treasurer. The Amendment Act of 1895 contained two important provisions: one prohibiting the importation of any animal, bird, reptile, or insect without a permit from the Minister of Agriculture, and the other authorizing the Governor, on recommendation of the colonial secretary, to prohibit the sale of game or native game in any district when necessary to prevent undue destruction of the species. In 1900 export of game was prohibited except under permit from the colonial secretary, and every third year, beginning with 1901, was made a close season for the native Pigeon, 'Pukeko' and 'Kaka,' or native parrots of the genus *Nestor*, one species of which, the 'Kea' of the Maoris, has become well known on account of its remarkable habit of attacking sheep.

The object of presenting this array of apparently uninteresting details is to furnish not only a résumé of New Zealand game legislation, but also to afford an opportunity of comparing the game laws of the colony with those of the United States. It must be admitted that 'The Animals' Protection Act of 1880' was in advance of most of our state laws of the same period, and, with its heavy penalties and provision for rangers, was more likely to be respected. It has stood for twenty-three years with less change than almost any of our state laws during the same time, possibly on account of the broad powers given to the Governor in modifying the game list, shortening or closing the open seasons, and prohibiting the sale of game, which adapt the law to local conditions and obviate the necessity for radical amendments. It is interesting to note that New Zealand prohibited the introduction of injurious species twenty years earlier than the United States, and required permits from the Department of Agriculture for all foreign animals and birds five years before Congress adopted similar provisions in the Lacey Act. Finally, in marked contrast with our practice, she has found it advantageous, in spite of her varied climatic conditions, to have a uniform open season of moderate length for all game instead of seasons of varying length extending over eight or nine months for different birds. Spring shooting is thus done away with and more effectual protection given to migratory shore-birds and waterfowl than is possible under our present laws.

NATIONAL COMMITTEE OF AUDUBON SOCIETIES

EDUCATIONAL LEAFLET NO. 7

THE SNOWY HERON

Order—*Herodiones*
Family—*Ardeidæ*
Genus—*Egretta*
Species—*Egretta candidissima*

The Snowy Heron

By WILLIAM DUTCHER

Chairman National Committee of Audubon Societies

Description—Snowy Heron (*Egretta candidissima*). There is no difference in the plumage of the sexes, both of which are always pure white. Occipital (top of head) and jugular (lower throat) region with plumes. From the interscapular region (between the shoulders) grow a large number of "aigrette" plumes which extend to or beyond the tail and, when in perfect condition, are recurved at tip; lores (front of eye), eyes and feet yellow. Bill black, except at base, which is yellow; legs black, except lower portion behind, which is yellow. The adults *after* the breeding season and the immature birds do not have the 'aigrette' plumes. Length from tip of bill to end of tail not including plumes, varies from twenty to twenty-seven inches.

The Snowy Heron always breeds in colonies. *Nest*, a closely built platform of sticks, in rushes, bushes or trees in swamps. *Eggs*, three to five in number, of a light greenish blue color.

Distribution.—All of temperate and tropical America between 41° north latitude on the Atlantic coast; 45° north latitude on the Pacific coast, and 35° south latitude. After the breeding season, stragglers from the southern states sometimes wander as far north as Nova Scotia and Ontario.

The American Egret (*Herodias egretta*) is almost twice the size of the Snowy Heron, its length being from thirty-seven to forty-one inches; it is also pure white, and both sexes have during the breeding season *only* a large number of interscapular plumes which extend beyond the tail. These plumes are *straight*, and *not* recurved as are those of its smaller relative.

The White Herons of the other parts of the world are very similar to those found on the American continent, even to the difference in size. Corresponding to the Snowy Heron in America, *Garzetta garzetta* is found in southern Europe, across to China and Japan, south to the Burmese countries and the Indian Peninsula and Ceylon, Philippine Islands, Malay Peninsula, and the whole of Africa. A second small form, *Garzetta nigripes*, is found from Java throughout the Moluccas to Australia. The large forms, corresponding to the American Egret, are *Herodias alba* of southern Europe, east to central Asia, and south to Africa, the Indian Peninsula and the Burmese countries; and *Herodias timoriensis*, which is found from Japan and north China, south through the Malayan Archipelago to Australia.

The food of Herons consists of shrimp, small fish, aquatic insects, crayfish, and life found along the shores and in swamps. Economically, so far as known, they are neutral or harmless, but may prove to be highly beneficial when a scientific study of their food has been made.

The recent history of the White Herons is pathetic in the extreme, as it is a tale of persecution and rapid extermination. It was a sad day when fashion decreed that the nuptial plumes of these birds should be worn as millinery ornaments. Feathers and scalps, rapine and blood are the accompaniments of savage life, but better things are expected of civilization.

It is hardly possible that any women of the present day are unacquainted with all the horrible details of plume-hunting. The following pen picture of the horrors of the plume trade, drawn by Prof. T. Gilbert Pearson, Secretary of the North Carolina Audubon Society, shows the work in all its bloody reality:

"In the tall bushes, growing in a secluded pond in a swamp, a small colony of Herons had their nesting home. I accompanied a squirrel-hunter one day to the spot, and the scene which met our eyes was not a pleasant one. I had expected to see some of the beautiful Herons about their nests, or standing on the trees near by, but not a living one could be found, while here and there in the mud lay the lifeless forms of eight of the birds. They had been shot down and the skin bearing the plumes stripped from their backs. Flies were busily at work, and they swarmed up with hideous buzzings as we approached each spot where a victim lay. This was not the worst; in four of the nests young orphan birds could be seen who were clamoring piteously for food which their dead parents could never again bring to them. A little one was discovered lying with its head and neck hanging out of the nest, happily now past suffering. On higher ground the embers of a fire gave evidence of the plume-hunters' camp.

The next spring I visited this nesting site, but found only the old nests fast falling to decay.

When man comes, slaughters and exterminates, Nature does not restore"

This story of a single Florida colony is the story of what has happened in all of Florida, the Gulf coast of the United States, along the Mexican and Central American coast, both on the Atlantic and Pacific sides, and has extended into South America. From the enormous numbers of Herons' plumes that are annually sold in the London feather market there is no doubt that plume-hunters are at work wherever the white Herons are found.

That Herons are rapidly becoming scarce and more difficult to obtain by the plume-hunters is shown by the difference in price in the raw material. Twenty years since, the cost per ounce was only a few dollars, now it is more than quadrupled. In circulars sent by New York feather dealers to plume-hunters in Florida during 1903, thirty-two dollars per ounce was offered for fine plumes. This not only indicates the rapidly increasing scarcity of the white Herons but also that some dealers are willing, in order to obtain the plumes, to offer special inducements to hunters to violate laws enacted for the protection of these birds.

The much-sought-after plumes are worn by the Herons only for a very limited period during the year, that is, in the breeding season. Unfortunately, during that time the Herons gather in colonies; whether this is for protection or is merely social is not known. During the remainder of the year they are wild and wander over large districts, when it is impossible for plume-hunters to kill them in quantities that would afford pecuniary returns. However, during the breeding season the habits of these unfortunate birds change entirely,

'SCALP,' OR RAW PLUMES AS TAKEN FROM BACK OF BIRD

PLUMES FROM EGRET; THE 'STUB' PLUME OF COMMERCE

PLUMES FROM BACK OF SNOWY HERON; THE 'AIGRETTE' OR 'OSPREY' O COMMERCE

and with the growth of the parental instinct they lose all sense of fear or wildness and the hunter has little trouble in securing his victims. The death of the parent birds entails the destruction of the helpless nestlings by the painful and lingering method of starvation.

Mr. Chapman says, in his 'Birds of Eastern North America,' "The destruction of these birds is an unpleasant subject. It is a blot on Florida's history." The blood stain is not on Florida alone but may be found in every part of the world. A few years more of reckless slaughter during the breeding season and the white Herons will be classed among the extinct birds, the number of which is far too rapidly increasing.

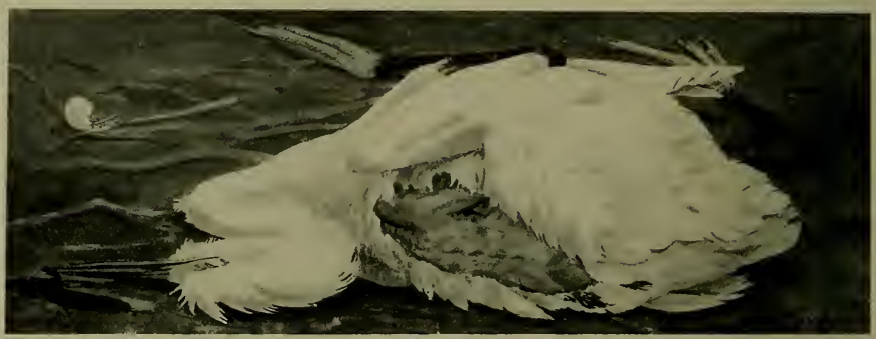
Dealers often state that 'aigrettes' are manufactured, but this is not so; man has never yet been able to imitate successfully these beautiful plumes; all that are offered for sale have been torn from the backs of the smaller white Herons. Even the stiff plumes, which are known in the trade as 'stubs,' are not manufactured but are the plumes of the larger species of white Herons.

Herons' plumes are often sold as 'ospreys'; this is simply another trade name used to disguise the fact that they are Herons' plumes: the 'Osprey' of science is the Fish Hawk, which produces no plumes of any kind.

Both 'aigrettes' and 'stubs' are dyed various colors, especially black; however, no matter what is the tint of the plume when offered for sale at the milliners', its original color when on the back of the Heron was white; the artificial color is merely in response to the dictates of fashion.

It is conceded that the sale of aigrettes from American birds is prohibited, but it is claimed that there are no laws that prevent the sale of imported goods. Granting that this may be the case, how is the buyer to tell whether the goods are from American or Old World Herons? The most expert ornithologists cannot separate the plumes after they are taken from the birds.

The wearing of 'aigrettes,' or plumes from the white Herons, whether native or foreign, has now become a question of ethics which every woman must decide for herself. It matters not a whit where the plume comes from, the fact remains the same that the woman who wears one is party to a cruel wrong and the plume itself becomes a badge of inhumanity and is no longer a thing of beauty.



HERON FROM WHICH PLUMES HAVE BEEN TORN

"Mark how the Mother lulls to slumber
Her new-born Babe with tend'rous love
And guards her treasure from above!"

The word Mother is the most sacred of all names, and motherhood is the closest of all human ties. Oh, Mother! when you nestle your little one to your loving breast and look into the eyes that reflect the mother-love shining from your own, do you not sometimes think with an involuntary shudder of the sorrow and grief it would be were the child to be taken from you? Or, still worse, if your tender care were to be removed from the helpless infant? While this thought is still with you, extend it to the bird-mother, for she surely has for her offspring the same tender love that you have for yours; she has the same affection, the same willingness to face danger to protect what is to all mothers dearer than life itself. Oh, human mother! will you again wear for personal adornment a plume taken from the dead body of a bird-mother, the plume that is the emblem of her married life as the golden circlet is of your own, the plume that was taken from her bleeding body because her motherhood was so strong that she was willing to give up life itself rather than abandon her helpless infants! Whenever you are tempted in the future to wear a Heron's plume, think for a moment of your own motherhood, and spare the bird-mother and her little ones.

Study Points for Teachers and Students

Trace distribution of each species of white Heron on the map of the world. When are the plumes worn by the Herons? Which species of Heron have recurved plumes? Which have straight plumes? How are Herons' plumes procured for the millinery trade? Do the habits of Herons change at any period in the year? In what way?

For life history of the American White Herons, read "Audubon's American Ornithological Biography"; for cause of probable extermination of white Herons in America read "The Present Condition of Some of the Bird Rookeries of the Gulf Coast of Florida," by W. E. D. Scott, Auk, Vol. IV. pp. 135-141, 213-222, 273-284; also "Stories of Bird Life," by T. Gilbert Pearson.

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MARCH — APRIL, 1904

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Bird-Lore

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FRANK M. CHAPMAN

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2. Wilson's Warbler, Female.
3. Canadian Warbler, Adult Male.
4. Canadian Warbler, Adult Female.
5. Canadian Warbler, Young Female.

(one-half natural size.)

Bird-Lore

A BI-MONTHLY MAGAZINE
DEVOTED TO THE STUDY AND PROTECTION OF BIRDS

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. VI MARCH — APRIL, 1904 No. 2

A Summer With the Bluebirds

By C. F. HODGE, Clark University

With photographs from nature by the author

THE twenty-eighth of last March a Bluebird was seen in a cherry tree over the study window. While he flitted down to the bird bath and took a few sips of the water that had probably attracted him to the spot, I quietly raised the window-sash and snapped a big mealworm far out onto the driveway. Scarcely had it touched the ground when two Bluebirds swooped down upon it. I had not seen the female before, and in the fluttering scramble I failed to note which bird got the worm. For a minute or two you may be sure the worms fell thick and fast and the two birds apparently fought for every one. They must have been famishing, for they ate more than a dozen large mealworms apiece. At last the female appeared to be satisfied and flew to a low branch of the cherry tree and did not come down for the next worm. The male dropped for it, however, but, instead of swallowing it, he flew to the side of his mate and with a bewitching twinkle of one wing offered her the worm. She took it from his bill; and this scene was repeated with the next three or four worms until, when he offered her another, she touched it daintily with her bill as if to say, "They are delicious, but I really can't eat any more," and turned her head away, and he swallowed the worm himself. This exquisite little piece of bird etiquette was enacted five or six times, and then both birds flew away.

We christened the birds on the spot 'Twinklewing' and 'Bluet,' but feared lest we had seen the last of our new acquaintances as they drifted out of sight among the tree-tops. Would they know enough to come back?

The question was answered within the hour by a soft flute-note from the cherry tree. There they both were, evidently expecting another hail of mealworms, nor were they disappointed. It was about eight o'clock in the morning when my story began. I happened to be writing at my desk all day and the scenes just described were repeated hourly until sundown,

except that the birds were not quite so ravenous after the first meal, and by afternoon I was safe in discarding caution and could throw the window wide open with as much noise as possible. I took pains to let them see into the large tin box swarming with worms as I held it in my hand and picked them out and tossed them down to the ground. We were pretty good friends by the close of the first day.

My ideas are apt to arrive by freight about the morning after, or, I am sure, I might have been able to record that wild Bluebirds could be tamed to feed on the window-sill in three hours' time. However that may be, next morning early they were both there as you see them in the picture, and the study window-sill remained their dining-table until the first brood left the nest on May twenty-eighth.

THE SECOND MORNING

A FEW DAYS LATER

A few days later when I came home from the laboratory Mrs. Hodge greeted me with: "You can't guess what happened this afternoon—Bluet perched on my finger and fed from the hand." After this it became the pastime of the family to have Bluet feeding on the hand, and often she would seem to linger to warm her toes. Twinklewing never grew quite

tame enough to alight on the hand, but he would come close enough to pick the worms out of it.

Bluet and Twinklewing had found water and food, and there were about twenty suitable houses within a stone's throw. However, I wanted them to nest closer to the window, and so made and put up a new house in the cherry tree, just where I could study them to best advantage. I hardly dared hope that they would go into it, there were so many other house about. Very soon their desire for a home eclipsed even their appetite for mealworms. They tried every house on the premises and might be gone—presumably house-hunting — for a day or two at a time. But at last, to my delight, Bluet began carrying billfuls of pine needles into my house in the cherry tree. But then, when the nest was finished, they seemed to pay no attention to it for nearly a week. Soon after that, however, there were five blue eggs and Bluet was brooding, or—as I thought — ought to 'have been. She was certainly off the nest more than half the time in daylight, flying about catching insects and enjoying herself generally. I was tempted to rate her as a shiftless mother, and did not believe that she would hatch a single egg. She did spend her nights on the nest and, after she had gone in and it was beginning to grow dark, Twinklewing would hang with his head in the box for minutes at a time, while a queer series of good-night squeaks could be heard. Then he would fly away, and I could not discover where he slept.

THE HOME IN THE CHERRY TREE · FIRST BROOD OF FIVE

I was glad to admit that Bluet knew more about hatching her eggs than I did, for they all came out May eleventh and all grew to maturity. The seventeenth day after hatching, the young ones sat for their pictures and betook themselves to the tree-tops. I left the nest undisturbed, but, while the parents continued to come to the window for worms, I did not see a Bluebird pay the least attention to it for the rest of the season.

It would take a book to tell all the pleasure and entertainment and opportunity for study they furnished. Several of my students worked their laboratory periods recording the number of insects brought to the nest, but the best students of all were the children, who daily had a story to tell of the Bluebirds catching insects in the garden or taking their baths in the

fountain. The upshot of these observations was that they must have some Bluebirds to catch the insects in their own gardens.

Without help or suggestion, a stick from the wood-pile and a discarded bird-house were brought into requisition, toggled together with many crippled nails, a hole dug and a house erected.

As if at bidding again, Bluebirds built in the new house. I am inclined to think they were the same pair, but, as we had ceased to feed at the window-sill, I am not certain. The brood of four hatched the seventeenth of July and flew the second of August. How this brood happened to appear as you see them in the next pictures requires a word of explanation.

A cold driving rain-storm prevailed the entire day, and, as I went down the path with my umbrella, I heard the note of a young Bluebird in distress. Wet and cold, he was perched on one of the lower branches of the cherry tree, and as I passed under I stopped a moment to look him over, when the most unexpected thing happened that has ever fallen to my lot. He deliberately flitted from his perch to the shelter of my umbrella and lighted in the hollow of my elbow. I took him into the house and fed him with mealworms, giving him a warm place by the kitchen stove.

On my return an hour later, I found two Bluebirds in my day nursery, and learned that the second little voyager had flown plump against our dining-room window and had not knocked in vain. The other two were still in the box—all but their wet little heads—crying loudly for food. I had not seen a parent bird and did not see one about the nest the entire day. I took some mealworms down and tried to feed them in the nest, but on my approach they withdrew from the entrance and paid no heed to worms I dangled in the doorway. I was about to leave them to their fate when an idea happened to strike me at the right moment, and I gave the Bluebird whistle. Instantly the entrance was occupied by two gaping mouths, which

THREE BIRDS IN THE HAND

I proceeded to fill. In this way I fed them two or three times during the afternoon and at the last feeding led them out onto my hand and brought them in to their fellows in the shoebox. Next day I tried to return the young birds to their parents, but, while I saw the female on the deserted box once, she paid no attention to the nestlings and soon flew off, never to be seen again.

ASLEEP

A month of delightful bird study followed. The nestlings were tame as kittens from the first, and never showed the least trace of fear or wildness. We gave them a room in the kennel, and how they learned to drink and bathe and feed themselves is a story by itself.

AWAKE !

One sad incident I ought not to omit. In my series of feeding tests I brought in a number of potato beetles and thoughtlessly dropped a large larva into an open mouth before observing whether they would take them of their own accord. I noticed then that they picked them up once apiece, wiped their bills in disgust and declined to touch them again. Next morning one of the birds was dead under the perch.

We liberated the birds—each with a tiny aluminum anklet, for purposes of identification this spring—one bright morning in early September, and feared we had seen the last of them as they flitted out of sight among the tree-tops. I was glad, however, to see that they were actively catching insects among the branches, and since black cherries were ripe they

could not lack for food. We saw little more of them that day, but next morning at sunrise I was awakened by the flute notes of hungry young Bluebirds. There they all were, clamoring for mealworms, and they all came to the hand to feed. For about three weeks they remained in the neighborhood, and a whistle or two would bring them down to our hands. A young Chipping Sparrow, while it never came to feed, was always seen with the Bluebirds. I had hopes that by feeding abundantly I might be able to hold them through the winter and soon have a colony of tame Bluebirds; but about September 20 they suddenly disappeared. I thought they had started on their long journey, but two weeks later the three Bluebirds, with Chippy still in tow, came back, as it would seem, to bid final adieu. They all came to the hand as before, but mealworms seemed to have lost their attraction somewhat; for they, for the first time, left some uneaten. Except for here and there a tell-tale feather, they now looked like adult birds. Since that day we have neither seen nor heard them, but we still cherish the hope that spring may bring them to us again.

FEEDING THE ORPHANS

A Massachusetts Duck Hawk Aery

By GERALD H. THAYER

THE Duck Hawk, or American Peregrine Falcon, is uncommon enough, so that the following account of a remarkably full and satisfying experience with a nesting pair may be of some interest. Mindful of taxidermists and egg-collectors, I shall refrain from naming the exact location of the aery, which may be annually reoccupied for many years to come if no unfortunate accident happens to the grand old birds. Suffice it to say that it is in Berkshire county Massachusetts, many miles from the two aeries recorded by Faxon and Hoffman (Birds of Berkshire County, p. 41). In September, 1902, I found two adult Duck Hawks haunting a certain rugged, craggy hill, which towers above a well-watered and fertile intervale of the beautiful Berkshire country. The more gently sloping sides of this hill are heavily wooded, but the one on which the Hawks were found, being everywhere almost precipitously steep, supports only a meager growth of trees, and, where not entirely denuded of soil, is covered mainly with blueberry bushes and brambles. It contains several sheer and even overhanging cliffs, unscalable by man without the aid of ropes, and in all respects well suited to the nesting of such a lover of bold crags as the Peregrine Falcon.

On the September morning when I discovered the birds here, they were very wary, and took themselves off after a few gyrations over my head, well out of gun-shot range. Nesting was, of course, long over for the year, but I found ample signs that the hill was a habitual breeding-ground of theirs. Almost all the shelves and ledges overtopping and bordering one of the larger cliffs were strewn with feathers,—some fresh, some matted and decomposed. Those of domestic Pigeons were much the commonest, but there were also Ruffed Grouse, Flicker, Kingfisher, Blue Jay and hen feathers.

Nearly eight months later, on May 31, 1903, I again climbed the hill, determined to find and reach the nest if it were humanly possible. To my great delight, the Hawks were there, and with significantly altered demeanors. I was half-way up the steep hillside, picking my way between precipices, before I heard or saw them; then the pair, mighty female and smaller male, launched themselves, shrieking, into the air from the biggest and most distant cliff, and in a few seconds were wheeling over me, with frantic cries, most menacingly near. The female was by far the bolder of the two, coming nearer and staying longer than her mate; and this difference in their characters proved to be constant, and at all times most pronounced. From the field below I had espied a very suspicious-looking white stain, on the border of the nearest high cliff, and this I now

tried to reach from above. The Hawks had already desisted from their attack and taken up their old position on the other cliff; but when I emerged from a thicket, on the side of a chasm, and crawled hopefully out along the sloping ledge to the last bit of safe ground in the direction of the white stain, the female,—blue-backed and ruddy-breasted and superbly marked, with tremendous yellow feet, flight of transcendent force and swiftness, and ear-splitting, savage, raucous, incessant cries,—dashed across and assailed me more violently than ever. She once came so near that I felt the wind of her great wings on my face. But this sortie was as brief as it was bold, and the bird soon rejoined her impassive mate on the distant cliff, leaving me to grapple with the problem of reaching the suspected ledge below me. Clutching a dead hemlock sapling which stood on the ultimate verge, I leaned far out over emptiness (two hundred feet, more or less, above the foot-hill field). There, seven feet below me, and off to one side, was the dribbled bottom of the guano-heap. The nest, if nest there was, could not be seen because of a projecting rock. Having no rope, I stripped off my shirt and undershirt, twisted them together, tied one end to the base of the hemlock, and, holding on for dear life, leaned out still further. But lean and peer as I might, the back part of the cranny remained hidden, and nothing could be seen of the nest. Sorely tantalized, I retreated, made a long, laborious circuit through vilely dense brush and brambles, which concealed numberless jagged rocks and treacherous holes, and climbed to the highest accessible point below the guano-mark. But the nest was no more visible from below than from above,—projecting rocks still cut off the back of the cranny from my view. So, though the female's furious attack had firmly convinced me that I had found the nest, I gave up trying to reach it, for the time, planning to return with a rope and a companion. Before leaving the hill, however, I went over to investigate the other high cliff, where the Hawks spent most of their time. They were sitting there as I approached the verge from above, and suddenly took wing, together, and shot past me, with a great roar of vibrating quill-feathers, at such astounding speed that I did not manage fairly to focus my eyes upon them. They appeared as two bow-bent, lightning-rapid streaks, and disappeared over the hill's further rim almost before my brain had interpreted the imperfect message from my frustrated eyes. Again, a few minutes later, I saw beautiful speed-feats performed by the male, as he and his mate were gyrating high over the cliffs. They were floating about in the bright, keen air, with the easy indolence that marks superlative power at rest; when, of a sudden, the male made a sharper wing-movement, and was two hundred yards away from his mate in the merest twinkling of an eye. Veering, he then returned to her with even more dizzying swiftness; and this performance was repeated several times. His wings always 'sang' on the backward course, but never when he was going away. This, and the greater

speed of the return, were doubtless owing to the fact that he always went somewhat upward from the female.

In Norway, I have seen a still more wonderful sky-dance of two Peregrines. The birds were fighting, high over the moors, and each step of the headlong dance was about a quarter of a mile long.

To return to the Berkshire Hawks. The notes of the sexes were decidedly unlike. The screams of the male were weaker, with a different inflection, and less constantly iterated, than his mate's. Her common cry was a single-noted, piercing, savage scream, susceptible of tolerably good imitation by a man's voice. Occasionally, and particularly when she had been screaming incessantly for several minutes, her voice dropped to a much lower note, and she uttered a deep, gruff barking, very much like the coarsest note made by the Great Black-backed Gull on its breeding-grounds. This note might also be likened, in some of its variations, to the 'honking' of the domestic Goose, though having far less modulation. Though the male's voice was not so loud, he had, in addition to notes much like the female's, though less strenuous, a two-noted, half-whistling call which she appeared to lack. In plumage the two birds were almost precisely alike. Both had strong cheek-patterns, rock-blue backs, lightest on the tail coverts and darkest on the head, with clearly-defined dusky wave-bands, or marblings; both were very ruddy underneath, with almost round black markings, except for the flanks, which were slaty-gray barred with dusky; and both had bright yellow tarsi and feet, and yellow ceres.

I spent little time in examining the second cliff that day, feeling so confident that the nest was on the other. The birds were left undisturbed for a few hours; but their troubles began anew early the next morning when I returned to my task, with a competent companion and an inadequate rope. We encountered many unexpected difficulties in reaching the guano-heap, even with the rope, owing to the overhung and otherwise obstructive conformation of the cliff at that point. But at the end of two hours of maneuvering, we managed to rig the rope for an ascent,—possible, but very unpleasant. After a few false starts, I scrambled up. The nest was a farce! Nothing but a shallow, empty pit in the rock-face topped the guano-heap, which was revealed as merely the mark of one of the old birds' favorite perches. Of these there proved to be several, equally conspicuously branded, on the other cliff, to which we now turned our attention. For there the nest must surely be. But no! We searched many a ledge and cranny, with and without the aid of the rope, but found merely feeding-places, littered with pigeon-feathers and daubed with excrement. Furthermore, the Hawks, which had once that day made a dash at us on the other cliff, now flew quietly away, and seemed to take no further interest in us or our proceedings. This was, of course, a very bad sign, which helped to discourage us, and we went away disappointed and perplexed. Next morn-

ing I came again, alone, to try once more. One event of the preceding day, of which I had taken little note at the time, gave me a good deal of hope as I now scanned the hillside from below. The female had sailed down with a quarry to a place between the two cliffs, where from above I could see nothing but trees, and a sound unlike her usual calling had seemed to come from there after she had alighted. Knowing, however, that the Falcons sometimes sat on trees (I had seen one of them do it that very morning), and seeing no rocks at the place, I had ignored the new-note evidence as probably an error, and dismissed the matter for the time. (There was no tree on the hillside which could have furnished a suitable nesting cavity.) But now, looking from below, I was delighted to see an isolated cliff of fair size underneath the place where the Hawk had seemed to alight. I climbed toward this cliff with renewed hope, which was soon increased by the mother's appearing overhead and beginning a series of frantic plunges toward me, in a more determined fashion than ever before. When I tried to scale the cliff, which at that point was only about fifty feet high above the steep, wooded slope, she hurled herself at me, wildly screaming, in such a frenzy of passion that I half expected to have to fight her. The noble great bird always checked herself, however, just before she reached my head, and swerved aside, with a strong rustling of her sharp, steely, marvelously wielded wings. The cliff itself proved unclimbable at that point, so I scrambled up the steep, sapling-covered slope that bordered it, and presently came out on the flat top of the rock-face, shaded by small birches and hemlocks. The mother was more furious than ever, and I could not doubt that the nest was somewhere on the little cliff. Eagerly peering over, I at once espied white down-feathers, gleaming through the leaves of a birch; and in another second was feasting my sight on three princely, dark-eyed young Peregrines, about four weeks old, with many brown contour-feathers sticking through their milky fluff. Success at last! Their ledge, for a wonder, was within easy reach from above, and I was soon on it with them, deafened by the redoubled screechings of the anguished mother, and the concerted guinea-hen clatter of the youngsters. Approached too closely, they threw themselves upon their backs, and fought valiantly with bill and claws. Their feet were blue-gray and of ungainly bigness, and their toes sometimes doubled up sideways under them as they hobbled about.

The ledge, which was covered with the wreckage of hens, Chickens, Pigeons, Flickers and Blue Jays, as well as with excrement and pellets, was about six feet long by three feet wide, and overlooked most of the hillside. It was entirely inaccessible from below, but the merest child's play to reach from above, being only about ten feet from the top, and shaded by birch saplings which gave ample hand-hold for a descent. There was even one sapling growing on the ledge itself. No vestiges of true nest-

material were to be found on the littered ledge, and no egg-shells; but these would inevitably have been trodden down and covered up. The youngsters had their crops distended, and fresh, bloody dove-feathers under their feet revealed the character of the food they contained. Their cries were very like their mother's, but weaker; and when they all screamed together, as they did almost incessantly, the racket produced sounded, as I have said, almost like the cackling of a flock of Guinea-fowl.

I made three subsequent visits to the nest, with several trusted companions, all sworn to refrain from molesting the birds or revealing their whereabouts to other people. We used up two rolls of kodak films on the seated young and the attacking mother; but, owing to our inexperience, and the fact that the sunlight was then deeply obscured by forest-fire smoke, none of the pictures proved very good.

The parents were usually away hunting when we reached the aery in the afternoon, and only once or twice did we see them at home together. On one of these occasions we watched them angrily put to rout an unfortunate Red-tailed Hawk, who had wandered too near their young. Several times the female appeared over a farm-house three miles from her hill, flying rapidly in the other direction; and I once saw her returning with booty over the same route. This is in keeping with the habits of Falcons as reported by other observers, who say that the birds do most of their hunting at some distance from their aery, however plentiful the game in its immediate vicinity. On Isola Rossa, a beautiful little bird-island off the west coast of Sardinia (much resorted to, among other species, by the rare Audouin's Gull), my father and I found Peregrines breeding practically in the midst of a large colony of Rock Doves, though the one we shot was crammed full of Black Starlings (*Sturnus unicolor*), from the mainland. But I have wandered from my narrative. On the single occasion when we found the male alone on guard, he acted very timid, and hurried away, after a few feeble circlings and squealings. Perhaps he went to seek his wife. She, whenever she returned during one of our visits, began screeching in the distance, having apparently detected us from afar, and hardly ever ceased to fly back and forth past us and her charges, screaming furiously, as long as we were in the region. When I sat on the ledge beside the babies, photographing them, her agitation became so extreme that she very nearly attacked me outright. It was a most majestic and pathetic spectacle. More than once I felt the breath of her powerful wings upon my face, and often she approached within five yards before swerving aside. Her huge yellow feet were sometimes menacingly extended, and sometimes retracted, as she hurtled back and forth beside the cliff. Once, after we had been some time with the youngsters, the mother returned with a quarry, which she quickly deposited on a rock high up the hillside, to be unencumbered for her attack on the intruders. I went and found the thing,—which

proved to be a large white chicken, decapitated and eviscerated,—and brought it to the young ones. Their crops were always full, and we always found fresh feathers on the ledge. Twice or thrice they were pigeon feathers, and once those of a brown hen or chicken. The whole tale of species whose feathers I have found on this hill of pirates is as follows: Grebe (Dabchick) (not quite surely identified), Wood Duck (also not quite surely), Ruffed Grouse, hen, pigeon (their staple food), Nighthawk, Kingfisher, Blue Jay, Flicker (commonest after pigeon), Sparrow (not specifically identified) and Robin.

One thing more about these Hawks must be recounted,—my wonderfully close view of the father, which occurred in this wise: I was sitting, very quiet, on the ground above and just out of sight of the youngsters, who had entirely ceased their noise. Suddenly they began 'chirruping,' in a new and peculiar way, which I at once guessed must be an eager and fearless greeting to one of the parents. But the seconds passed, and no Hawk appeared overhead, while the chirruping continued unabated. Crawling to the edge and peeping over, I rested my astonished and delighted eyes, at the short range of about ten feet, on the neat blue head of the male, who had quietly sailed up from below, bringing provender. An attempt to photograph him scared him away, but not before I had had a splendid view of him, sitting fully exposed on the outer side of the ledge. When he flew, he carried the quarry with him! Cool-headed but mistaken daddy! He was afraid we would steal it,—and how different were our real habits and intentions! We had fed the youngsters beef (which they devoured greedily enough off the end of a stick, when it was shoved almost into their blathering mouths), and we had even brought them from a distant ledge the food captured by their mother!

My last visit to the aery was made on June 5. The young then showed almost as much brown as white, and had well-developed, banded tails. One of my companions saw them about a week later, and reported them as very nearly ready to fly.

And now for a few words of dissertation. In spite of the noble classical associations which cling to the Peregrine, and its unquestioned preëminence among the raptores, this bird is now officially 'black-balled' in America, and people are urged to destroy it at every opportunity,—according to the narrow, strictly utilitarian creed that all animals which detract in any degree from man's commercial gains must be exterminated. But does it not rather seem as if a bird of such vast interest to the naturalists, the poets, and all literate persons and lovers of life in general, ought to be carefully preserved, as an element of the intrinsic natural beauty of the country? We cannot blame the poor farmer for killing the individual Hawk that devastates his dove-cote; but this is very different from waging war upon the species at large. And, if only it could be arranged, how

gladly would those who care pay for all the damage done by Peregrines each year in the New England and Middle States, in order to keep the few remaining aeries tenanted! True, the birds are not yet in imminent danger of extermination—perhaps they are not much rarer than they always have been—but think how scarce they are relatively to any of our other Hawks, and how easily their few aeries in the civilized part of our country could be abolished! Surely all true ornithologists should refrain from molesting breeding pairs, whether for eggs or skins. Surely, too, all true ornithologists should be willing to spare them many Kingfishers and Jays and Flickers and Robins; for the wide lands of New England harbor untold myriads of these minor birds, while the known Falcon aeries of that same region could almost, figuratively speaking, be counted on ten fingers!

The Peregrine Falcon is, perhaps, the most highly specialized and superlatively well-developed flying organism on our planet today, combining in a marvelous degree the highest powers of speed and aërial adroitness with massive, warlike strength. A powerful, wild, majestic, independent bird, living on the choicest of clean, carnal food, plucked fresh from the air or the surface of the waters, rearing its young in the nooks of dangerous mountain cliffs, claiming all the open atmosphere as its domain, and fearing neither beast that walks nor bird that flies, it is the very embodiment of noble rapacity and lonely freedom. It has its legitimate and important place in the great scheme of things; and by its extinction, if that should ever occur, the world would be impoverished and dulled.

VIRGINIA RAIL ON NEST
Photographed by E. G. Tabor, Meridian, N. Y., May 23, 1903

The Whip-poor-will

By RETT E. OLMSTEAD

With photographs from nature by the author

IT was June 25, 1903, that Mr. Topliff, County Superintendent of Schools-Hook, Robert Hegner, and myself drove from Decorah, Iowa, down the Upper Iowa river eight miles for a day's outing. It was a delightful day and the birds were astir everywhere. With note-book in hand, the different species which we had actually identified during the day numbered fifty-two. Where we camped for the day we discovered a Yellow-bellied Sap-sucker's nest in the top of one of the tallest trees,

WHIP-POOR-WILL'S EGGS AND NEST

some 75 feet high. I had never before seen this bird nesting so high, and made a note of it.

NEWLY HATCHED WHIP-POOR-WILLS

After our noon lunch we were walking up the river, some ten rods distant from the stream, when we nearly stepped upon an old Whip-poor-will. No sooner had she wabbled away, feigning lameness, than we discovered two eggs. For a few minutes she flew about within a very few feet of us, but soon a little farther, and finally disappeared. The sun was bright, but the foliage upon the trees did not permit of a snapshot with the camera; consequently the camera was placed a few feet from the nest and focused properly, a string was attached to the shutter and I climbed a tree four rods away to await the return of the old bird. An hour passed, and no return. Mr. Hegner then relieved me and waited two hours without her returning. We then made several exposures of the nest and eggs, one of which, made with a ray-filter, is here shown.

Nothing more was done or was the nest visited by me again until July 4. The exact location of the nest being known, I had hoped to be able to make an exposure of the old bird upon the nest. Owing to the darkness of the woods and the wildness of the old bird, I was not successful in doing this when I first approached and found the old bird upon the nest. She flew at once, and I beheld two little bunches of sulphur-yellow cuddled in the spot from which she had flown. Some exposures were made of the young, as shown in the cuts. Two half egg-shells were still in the nest.

Determined, if possible, to get a picture of the old bird, I set the camera ten feet away, focused it upon the young and went away for our noon

WHIP-POOR-WILL ON NEST

lunch, being gone about an hour. Returning, I walked on as though going by the nest but close enough to the camera so as to press the bulb. The old bird was upon the nest, and in this way I obtained the picture as shown in the cut. The old Whip-poor-will was looking directly at the camera, and, as a result, is not easily seen in the picture. Never did we see but the one Whip-poor-will about the nest. From the appearance of the young, they could not have been more than a few days old. It was with difficulty that they were seen among the leaves when one was within even three feet. And the old bird upon the nest could hardly be seen unless one knew the exact spot where she sat. It was with great regret that I could not remain and study this household on up to maturity. The Whip-poor-wills are plentiful in this section, but this is my first nest of this good bird.

A NESTING CROW

Photographed by G. E. McColm, Bucklin, Kansas.

For Teachers and Students

The Migration of Warblers

THIRD PAPER

Compiled by Professor W. W. Cooke, Chiefly from Data in the Biological Survey

With drawings by LOUIS AGASSIZ FUERTES and BRUCE HORSFALL

BLACK-THROATED GREEN WARBLER

PLACE	No. of years' record	Average date of spring arrival	Earliest date of spring arrival
Atlantic Coast—			
Raleigh, N. C.	9	March 27	March 22, 1898
Asheville, N. C. (near)	4	April 28	April 24, 1893
French Creek, W. Va.	4	April 16	April 10, 1893
Washington, D. C.	5	April 26	April 22, 1888
New Providence, N. J.	7	April 30	April 23, 1891
Englewood, N. J.	6	April 30	April 25, 1901
Beaver, Pa.	6	April 30	April 25, 1891
Renova, Pa.	10	April 26	April 22, 1896
Alfred, N. Y.	15	May 1	April 22, 1889
Ballston Spa, N. Y.	7	May 8	April 29, 1894
Portland, Conn.	6	May 4	April 27, 1886
Hartford, Conn.	7	May 2	April 28, 1895
Providence, R. I.	4	May 3	May 1, 1897
Central Massachusetts	13	May 1	April 26, 1891
Southeastern Massachusetts	12	May 1	April 25, 1897
Northeastern Massachusetts	16	May 1	April 24, 1897
Randolph, Vt.	6	May 8	May 2, 1890
St. Johnsbury, Vt.	6	May 9	May 5, 1900
Southern New Hampshire	7	May 3	April 30, 1903
Southern Maine	8	May 6	May 3, 1894
Montreal, Can.	4	May 11	May 7, 1891
Quebec, Can.	9	May 10	May 6, 1900
Central Nova Scotia	4	May 13	May 10, 1896
St. John, N. B.	12	May 13	May 8, 1895
North River, P. E. I.	3	May 17	May 13, 1889
Mississippi Valley—			
Mouth Rio Grande, Texas	7	March 22	March 18, 1880
San Antonio, Texas	4	March 24	March 13, 1880
Eubank, Ky.	4	April 11	April 9, 1894
Chicago, Ill.	12	May 1	April 27, 1900
Rockford, Ill.	5	May 3	April 28, 1889
Brookville, Ind.	5	April 29	April 26, 1886
Waterloo, Ind. (near)	9	May 1	April 24, 1894
Petersburg, Mich.	10	May 2	April 25, 1886
Battle Creek, Mich.	6	May 3	April 28, 1885
Northern Michigan	2	May 23	May 20, 1899
Southern Ontario	9	May 2	April 28, 1902
Parry Sound District, Ont.	8	May 6	May 3, 1896
Ottawa, Ont.	16	May 13	May 4, 1885
Southeastern Iowa	6	May 5	April 30, 1895
Lanesboro, Minn.	3	May 7	April 30, 1888
Aweme, Man.			May 13, 1898
Athabasco Lake			June 3, 1901

FALL MIGRATION

PLACE	No. of years' record	Average date of last one seen	Latest date of last one seen
North River, P. E. I.	4	Sept. 5	September 13, 1890
St. John, N. B.	6	Sept. 13	September 25, 1891
Southern Maine	7	Sept. 27	October 2, 1898
Fitchburg, Mass.			October 9, 1898
Portland, Conn.			October 20, 1888
Southeastern New York	5	Oct. 4	October 15, 1887
Renova, Pa.	7	Oct. 7	October 12, 1899
Germantown, Pa.	5	Oct. 8	October 18, 1888
Washington, D. C.			October 20, 1890
Raleigh, N. C.	5	Oct. 8	October 16, 1893
Ottawa, Ont.	7	Sept. 27	October 8, 1887
Chicago, Ill.	9	Sept. 27	October 12, 1894
Eubank, Ky.			October 14, 1891
New Orleans, La.			October 28, 1899

GOLDEN-CHEEKED WARBLER

Arrived near San Antonio, Tex., March 13, 1895, March 10, 1896, March 9, 1897, March 13, 1898, March 14, 1900. Average, March 12.

WILSON'S WARBLER

Wilson's Warbler has been separated into three subspecies, an eastern form (*Wilsonia pusilla*) extending west to the great plains; a Rocky Mountain form (*Wilsonia pusilla pileolata*), and a Pacific form (*Wilsonia pusilla chryseola*).

The range will be sufficient to indicate which form is intended in each of the following notes:

PLACE	No. of years' record	Average date of spring arrival	Earliest date of spring arrival
Atlantic Coast—			
Rising Fawn, Ga.			May 1, 1885
Raleigh, N. C.	3	May 13	May 11, 1893
French Creek, W. Va.	2	May 10	May 9, 1893
Washington, D. C.	4	May 9	May 8, 1888
Englewood, N. J.	3	May 13	May 11, 1902
Beaver, Pa.	6	May 15	May 8, 1889
East Hartford, Conn.	7	May 13	May 10, 1894
Eastern Massachusetts	10	May 17	May 10, 1897
Southern New Hampshire	6	May 17	May 13, 1898
Southern New Brunswick	7	May 26	May 19, 1887
Godbout, Que.			June 3, 1884
Hamilton River, Que.			May 31
Mississippi Valley—			
St. Louis, Mo.	5	May 5	April 29, 1885
Chicago, Ill.	9	May 14	May 10, 1902
Waterloo, Ind.	6	May 15	May 10, 1903
Southern Michigan	8	May 17	May 11, 1888
Ottawa, Ont.	17	May 20	May 14, 1893

1. Black-throated Green Warbler, Adult Male.
2. Black-throated Green Warbler, Adult Female.
3. Black-throated Green Warbler, Young Female.
4. Golden-cheeked Warbler, Adult Male.
5. Golden-cheeked Warbler, Adult Female
6. Golden-cheeked Warbler, Young Female.

(one-half natural size.

WILSON WARBLER. continued.

PLACE	No. of years' record	Average date of spring arrival	Earliest date of spring arrival
Western America—			
Mouth Rio Grande, Tex.	2	April 28	April 26, 1878
Grinnell, Ia.	5	May 11	May 4, 1890
Lanesboro, Minn.	9	May 8	May 2, 1887
Elk River, Minn.	4	May 14	May 11, 1886
Aweme, Man.	4	May 15	May 12, 1898
Ft. Chippewyan, Ath.	2	May 26	May 23, 1901
Southern Arizona			April 12, 1902
Loveland, Colo.	2	May 12	May 11, 1889
Great Falls, Mont.	2	May 25	May 23, 1892
Kowak, Alaska			June 3, 1899
Central California	4	March 30	March 23, 1889
Southwestern British Columbia	3	May 6	May 3, 1889

FALL MIGRATION

Some dates of the last one seen are at Newport, Ore., August 30, 1900; Berkeley, Cal., September 17, 1888; Columbia Falls, Mont., September 14, 1894; Cheyenne, Wyo., September 11, 1888; Cooney, N. Mex., October 9, 1889; Aweme, Man., average four years September 8; Lanesboro, Minn., average of four years September 20, latest September 25, 1887; Grinnell, Ia., average four years September 21, latest September 25, 1888; Ottawa, Ont., average four years September 19, latest September 29, 1890; Pictou, N. S., August 24, 1894; St. John, N. B., September 17, 1896, Renova, Pa., average six years, September 21, latest September 30, 1895; Germantown, Pa., October 15, 1889.

CANADIAN WARBLER

PLACE	No. of years' record	Average date of spring arrival	Earliest date of spring arrival
Atlantic Coast—			
Asheville, N. C. (near)	2	May 2	April 29, 1886
French Creek, W. Va.	4	May 9	May 4, 1893
Washington, D. C.	3	May 9	May 5, 1888
New Providence, N. J.	5	May 16	May 10, 1888
Englewood, N. J.	3	May 15	May 13, 1899
Philadelphia, Pa. (near)	6	May 15	May 10, 1890
Beaver, Pa.	5	May 5	May 3, 1899
Renova, Pa.	8	May 8	May 4, 1900
Southeastern New York	9	May 20	May 11, 1890
Lockport, N. Y.	5	May 15	May 11, 1889
East Hartford, Conn.	5	May 19	May 12, 1888
Eastern Massachusetts	12	May 14	May 10, 1896
St. Johnsbury, Vt.	4	May 21	May 16, 1900
Southern New Hampshire	8	May 18	May 13, 1902
Southern Maine	6	May 19	May 15, 1897
Montreal, Can.			May 28, 1891
Southern New Brunswick	7	May 28	May 22, 1886

CANADIAN WARBLER, continued

PLACE	No. of years' record	Average date of spring arrival	Earliest date of spring arrival
Mississippi Valley—			
San Antonio, Tex.	3	May 1	April 26, 1887
St. Louis	6	May 9	April 28, 1888
Chicago, Ill.	11	May 15	May 11, 1897
Waterloo, Ind.	5	May 2	April 28, 1903
Petersburg, Mich.	8	May 13	May 10, 1894
Northern Michigan	2	May 28	May 24, 1895
Listowel, Ont.	9	May 4	April 30, 1899
Parry Sound District, Ont.	4	May 21	May 17, 1887
Ottawa, Ont.	14	May 21	May 15, 1888
Lanesboro, Minn.	9	May 19	May 14, 1891
Northern Minnesota	4	May 23	May 21, 1900
Aweme, Man.			May 20, 1899

FALL MIGRATION

Some dates of the last seen are at Grand Rapids, Athabasca, August 20, 1901; Aweme, Man., August 30, 1901; Ottawa, Ont., September 5, 1890; Chicago, Ill., September 16, 1894; Waterloo, Ind., September 28, 1902; Petitcodiac, N. B., August 21, 1886; Pittsfield, Me., September 12, 1897; Amherst, Mass., September 29, 1891; Renova, Pa., average of six years, August 14; Germantown, Pa., October 1, 1889; Englewood, N. J., October 2, 1886; Bay St. Louis, Miss., October 15, 1899.

BROWN THRASHER

Photographed from nature by R. H. Beebe, Arcade, N. Y.

The Warbler Book

By FRANK M. CHAPMAN

IN BIRD-LORE for December, 1903, the editor mentioned briefly a proposed book on the Warblers of North America, and requested the aid of students of birds throughout the country in the preparation of this volume. Continued study of our birds emphasizes the absolute necessity for many observers if we are to have anything approaching adequate biographies of even a single species. Habits should be affirmed or denied only on the basis of abundant data; again, what proves true of a species in one part of its range may be incorrect in another; and we need, therefore, not only many observations from one place but from many places throughout a bird's range before we can write its life-history with an approach to thoroughness.

Coöperation, therefore, is the watchword of the bird-study of to-day. Instead of thinking that there is little left to learn, every bird student should feel that it is his special privilege to add to our knowledge of birds in nature. He may not make a novel or startling discovery, but he may confirm some observation which has already been made, and that, as a matter of fact, is second in value only to the original observation itself. An *act* may be attributed to a species on the basis of a single observation: but a *habit*, only after many observations.

The truth is, the best of our bird biographies tell the story of the individual rather than of the species. Life is too short for a single student to acquire a thorough knowledge of more than a few species of birds, and even then his experience is apt to be limited to a small part of their range. In the writer's opinion, the bird biographies in Bendire's 'Life History of North American Birds' are among the best if not the best of any which have been written. This is not solely because of Major Bendire's wide field experience and powers of observation, but also because he secured the coöperation of ornithologists throughout the country. It was not required that they should be skilled in painting pen pictures of bird-life; facts, not rhetorical flights, were wanted, and the result is one of the most satisfactory books of reference of its kind.

There is an object-lesson for us here. In our enthusiastic appreciation of the bird as a creature of rare grace and beauty, the final touch giving life to woods and fields, let us not forget that as bird students we are here more intimately concerned with the birds' habits than with the part they play as the 'jewels of creation,' when, with no loss of appreciation of the esthetic side of bird-life, we may make our bird biographies a storehouse of exact and detailed observations in regard to a bird's distribution, migrations, its manner of courting, singing, nest-building, incubating, caring for its young, the relation between its structure and habit, etc.

Our proposed study of the Warblers, then, may follow somewhat the lines just suggested. Stated more fully, it is requested that each bird on which a report is made be treated as follows:

Name of the Species.—Give the A. O. U. common and scientific names and any local name in current use.

Local Status.—Define the bird's manner of occurrence, whether summer resident, transient visitant, etc.; whether rare, common, or abundant, etc.

Migration.—Give the time of arrival in the spring from the South, the difference, if any, in the arrival of the sexes; the date when the species attains its greatest numbers; if a transient or winter visitant; the date when last observed. Give the date of departure of summer residents, of arrival and departure of transients and winter residents from the North. (See Bird-Lore, III, 1901, p. 27.)

Song.—Describe call-notes and song, and any especial significance (e.g., in courtship or as a means of communication) which may in your opinion be attributed to them; any sexual difference in call-notes; whether female is heard to sing; duration of song period; giving earliest and latest dates when species is heard to sing; has it a second or fall song period; give station usually chosen for delivery of song,—ground, tree, etc.; is there a flight song? any seasonal variation in song? (See Bird-Lore, III, p. 28; V, p. 56.)

Courtship.—Under this head note any obvious attempt by the male to win the attention of the female through display of plumage or of vocal powers.

Haunts.—Describe the character of the locality in which the species is found most commonly. Is there any seasonal variation in haunts?

The Nesting Site.—Give exact location of site or sites in which nests have been seen. Does either sex select the site? Is the same site ever used again for a second brood or in a subsequent year? (See Bird-Lore, V, p. 57.)

The Nest.—Describe materials and shape; is it built by female or male, or both? Give time occupied in construction; date when finished.

The Eggs.—How long after the nest is completed is the first egg laid; when is the set completed? How many eggs does it contain? When does incubation begin; how long does it continue? Is it performed by the female alone? If by both sexes, is there any regularity in their daily periods of sitting? Is the sitting bird ever fed while on the nest?

The Young.—What is the appearance of the young at birth? If blind, when do the eyes open? How long after hatching before the young birds are fed? How are they fed? What is the nature of their food? Does the food or manner of feeding change as the birds grow older? About how often are the young birds fed at a given age? How is the nest kept in a sanitary condition? At what age do the young have the nest; do they ever return

to it? How long after leaving the nest do the young birds remain under the care of the parents? How do the parents endeavor to protect the young? By scolding, direct attack, or feigning lame, etc. Have the young any characteristic calls? Is more than one brood reared in a season?

The writer earnestly hopes that he will receive the active coöperation of bird students in securing information regarding the habits of Warblers, along the lines suggested above. Do not neglect sending your observations because they are incomplete. Every fact will be welcomed and full credit will be given for all material used. Let us make this book of the Warblers a thoroughly representative and satisfactory piece of work, and lose no opportunity during the coming nesting season to add to our knowledge of these birds.

Bird Lists of the Massachusetts Audubon Society

In order to encourage systematic observation on the part of its members, the Massachusetts Audubon Society supplies them with check-lists of birds, with blanks to fill in the locality and date at which the species noted was seen or heard.

The best ten lists covering the period from January 1, 1903, to January 1, 1904, which have been returned to the secretary of the society, were prepared by the following observers: Pupils Tarbell Grammar school, 92 species; Louise Howe, 94 species; Catharine Cravath Whitaker, 100 species; James Lee Peters, 101 species; Samuel D. Robins, 107 species; Lilian Cleveland, 117 species; Elizabeth S. Hill, 120 species; Richard M. Hunt, 128 species; Isabel B. Holbrook, 132 species; Lilian E. Bridge, 156 species. All these lists are based on observations at several localities. The highest number of birds recorded from one place is eighty by Edwin Leonard, at Feeding Hills (Agawam). Mr. Leonard writes that all but one of these were seen or heard on his own premises, mostly about his house.

Books for sale or Exchange

FOR SALE

Studer's 'Birds of North America,' with one hundred nineteen colored plates. E. G. Ives, *Dorchester, Mass.*

BACK NUMBERS OF 'THE AUK'

I would like to dispose of all my early volumes and back numbers of 'The Auk' (unbound and in good condition) at a very moderate price. Rev. A. T. Gesner, *Faribault, Minnesota.*

For Young Observers

Notes on the Birds of February and March, 1902

PRIZE ESSAY

By VINCENT E. GORMAN (aged 14 years), Montclair, N. J.

DURING the winter and spring of each year it is my custom to take short trips, generally into the rural district west of Orange Mountain, New Jersey, to look for birds. On these journeys I carry an opera-glass and a note-book, in which I record the number and kind of birds that I see.

My list for February, 1902, includes the Robin, Bluebird, Crow, Blue Jay, Red-tailed and Marsh Hawks, White-breasted Nuthatch, Chickadee, Downy Woodpecker, Golden-crowned Kinglet, Goldfinch, Junco, and the English Song, Chipping and Tree Sparrows.

I was rather disappointed not to find the Crossbill, Northern Shrike, and other winter visitors, but the winter had been too mild, I think, for them to venture so far south.

My first Robin was seen on Lincoln's birthday, and a Bluebird showed its patriotic colors a few days later. On February 20, a flock of Robins appeared, on their northward journey. It seemed like spring to have these neighbors back again, though the wind whistled past the telegraph wires and the ground was covered with snow.

Toward the end of March the Robins became more numerous. On one morning, between six and seven o'clock, I counted no less than 527 of them, all flying north. A few days previous to this I saw 336 Crows.

This winter I learned that the Blue Jay is capable of making a number of sounds other than its usual screams. While walking through the woods one day I heard a noise similar to that produced by an unoiled grindstone. I investigated, knowing that none of those implements were to be found in that vicinity, and were surprised to find the squeaks made by a Blue Jay.

The Goldfinches were scarcely recognizable in their winter dress, but when I drew near I could detect the yellow showing through the brown feathers. I was interested in watching a small flock which had head-quarters in an old field. These birds could distinguish between the careless walk of a passer-by and the cautious manner of a bird student. When I approached stealthily they would rise and swing merrily to the other side of the pasture, calling "*ba-by! ba-by!*" as if to ridicule my endeavor to reach them. If, however, I changed my tactics, and walked rapidly past, with no attempt at concealment, they remained perfectly still.

A flock of Song Sparrows stayed through the winter, and seemed as

cheerful and contented as ever. They took up their abode in a thicket of seed-bearing bushes which furnished them with food.

At first I was puzzled by the Tree Sparrow, not having seen it before. I thought it some large kind of Chipping Sparrow, but a closer view, revealing a small dark spot on the throat, and other characteristics, served to change my opinion. While watching a flock of them in a meadow, I heard their soft, sweet, twittering song.

At the end of March I was able to add to my list the Red-winged Blackbird, Purple Grackle, Flicker, Canada Goose, Great Blue Heron, Meadow-lark, Phœbe, and the Field, Fox, and Vesper Sparrows.

The Purple Grackles came in tremendous flocks—in one I think there must have been a million or so of birds. The sound made by their chattering and the movement of so many wings resembled that made by the wind rushing through the dried leaves of an oak.

I saw my first Fox Sparrows and Meadow-larks on March 8. Although the Sparrows did not sing, I had an opportunity of seeing their peculiar habit of scratching with both feet at once. The flock contained seventeen birds, besides three of their cousins, the Juncos. These little birds acted as sentinels, one always being on guard, and whenever I approached too near it would fly up, flirt its gray and white tail, give a sharp '*chip!*' and the whole flock would take the alarm. The Meadow-larks were busily exploring a snowy corn-field for their dinners, now and then giving a shrill, piercing whistle.

In the Phœbe I had a good example of protective coloring. While in a swampy piece of woodland, I saw a bird fly into some alder bushes, but on investigation I could see nothing of it. For quite a while I examined the bushes, until a Phœbe flew from its perch, secured a fly, and returned. It had been sitting in plain view all the time, but, because its color blended so well with that of other objects, I was unable to detect it.

Next year I hope to be more successful in my observations, but, in the meantime, I intend to improve my knowledge of birds in every possible way, and I advise other bird-students to do the same.

The Prize Competition

Prizes for the best three essays on February Bird-Life have been awarded as follows: First prize, Anna D. White, Lansdowne, Pennsylvania; second prize, Henry Darling, Rockland, Massachusetts; third prize, Carl Lawrence, Groton, Massachusetts. Master Lawrence illustrates his article with several photographs made by himself.

Notes from Field and Study

A Plea for Bird Boxes

The majority of birds build their nests either in trees or on the ground, but we have a few that excavate a hole in a live or dead tree for their nest and also a few that build in any hole in a tree, bird-box, or, in fact, in any crevice which is a foot above the ground; and these are the birds for whose use I wish to ask the people who are interested in the increase of some of our most beneficial birds to nail up some tin cans or cigar-boxes in their orchards.

We have Audubon Societies all over our country that are striving to protect and increase bird life; they have had wonderful success and with hard work have achieved much, and these few words are written as a suggestion to help along a good cause.

The farmers of today keep all their fruit trees well trimmed, all dead wood cut out, and all old trees, which are a paradise to House Wrens, Bluebirds, Chickadees, Great-crested Flycatchers, Purple Martins and English Sparrows, are cut down and replaced by young trees. Thus these birds have hard work to find nesting sites, and I believe their numbers are much restricted by this cause. Take an average orchard of about twenty-five trees; say there are five cavities suitable for nests, which would be very liberal, for in many orchards you could not find one. If we start with a pair of Wrens, which average seven young to a nest and will raise two broods a year, in one year we have eight pairs of birds and only five suitable nesting sites. English Sparrows are gradually working from the cities out into the country, and as they do not migrate and use their nest for a roost in the winter-time, they are not long in finding these cavities in the trees; they build in them, and when our Wrens, Bluebirds and their less numerous companions arrive from the South they find their nesting site already occupied by Sparrows. Many of these birds then hang around and do not nest the whole season, and if this continues it will much deplete our flocks of useful farm birds. My suggestion now is to put up bird-boxes for these birds. A tomato-can makes a good home for a Wren or a Bluebird. Bend the lid back, leaving a small opening; also remember to put one or two holes in the bottom so that it cannot fill with rain and thus drown out the birds, as often happens in cavities in trees, and you have a very durable bird-house which will last several years. These birds as a class feed only on insects, bugs, caterpillars, etc., and farmers would find them very useful in protecting their trees and crops.

I do not think that English Sparrows will nest in anything as small as a tomato can, but if they do they may easily be kept out by making the opening in the box or can only one and one-eighth inches in diameter. A Wren may easily get in and out of this, but it would keep out the Bluebirds with the Sparrows. Many farmers have one or two bird-boxes near the house, but they never think of erecting any in the orchard.

I put up twenty cans and cigar-boxes last year in an orchard, of which fourteen were used, ten by Wrens and four by Bluebirds. In the orchard I could find only one cavity; this was not used, as the birds that had occupied it the previous season used a tin can instead.

I believe many birds do not nest because they do not find suitable nesting sites. Birds return to the same nesting site year after year, and it is very hard on them if, when they come back, they find their favorite tree cut down or, as often happens, that the nest is being used by English Sparrows. I do not contend, as some do, that the English Sparrow drives all our native birds away by fighting; he does it another way. He takes possession of their nest in the winter time when the owners are South, and when they come back they are seldom able to

drive out the Sparrows, who by this time generally have young in the nest. No one can blame them for defending their eggs or young against birds they have never seen before. Nothing is too small for Wrens to build in, and nothing too large; whatever they build in, they will fill up all waste space with sticks. Tie up a paper bag, put a hole in the side and a Wren will use it for a nest. This shows how hard up they are for nesting sites; so why can we not help them out,—every one do a little?

In the vicinity of New York Bluebirds begin to build the first week in April and House Wrens the first week of May.

The boxes should be put up in March, but I have had a box used which I put up as late as June 1.—JOSIAH CLARK.

An Unusual Nest of the Cliff Swallow

Many years ago a colony of Cliff Swallows annually domiciled under the eaves of a neighboring barn. Upon the introduction of the European House Sparrows, I noticed that they occupied the old nests before the migrants arrived in spring, and annoyed the Swallows so that they left in despair. In 1901 and 1902 a colony of Cliff Swallows built under the eaves of Mr. Paul Fuller's barn, in Wykoff, N. J., and in 1902 they built in a barn at Saddle River. In the latter place there was nothing in the shape of a projection under the eaves, to serve as a foundation for a nest. So the birds had some failures in building. One pair, with apparently more intelligence than the rest, took advantage of a ledge which did duty as weather strip over the top edge of a wicket door, as here shown in a photograph by Mr. Winfred Smith. After the nest was deserted it was taken down and presented to the American Museum of Natural History. The distance from the top of the ledge to under eaves is about eighteen inches. This distance was reached by building a cylinder tube of clay worked up with short straw, and filled with straw up to a height where it would just have room enough to build the nest on top; all of which was perfectly done, and the birds had the happy satisfaction of rearing their young on this ingenious construction. Now it is evident that the pair of birds surveyed the situation and built this remarkable structure without any attempt at a nest until they reached the desirable distance to construct their nest, so they could reach the ceiling of the eave to fasten the nest to. It seems to me to be a case of adaptability for which an unreasoning instinct does not satisfactorily account.—HENRY HALES, *Ridgewood, N. J.*

AN UNUSUAL NEST OF THE CLIFF SWALLOW

A Winter Mockingbird

This morning (Feb. 16, 1904) the thermometer registers two degrees below zero, and a Mockingbird has eaten several times at his box against the house where I can reach it from a window and keep the food in order. He has been to this box every day since December 5, many days procuring from it all the food he has had—the snow covering everything else. Many nights the temperature has been several degrees below zero and he has weathered it, to our amaze-

ment. He is extremely tame, comes many times almost immediately after we call him.

This bird was first discovered in the neighborhood the second week in July, 1903, bringing with him the most beautiful song. He has been heard from every day since and we have not known of his leaving the block, which is about 800 feet long, with a range of about 400 to 600 feet wide. It has been my satisfaction to locate him every day (except when out of town on a short vacation).

He sang until late in November, sitting on a cedar hedge back of our house, pouring forth every kind of bird note in a low strain, lonely in its tone after all the other birds had gone. Since then he has had a sharp little call, like that of a Catbird, and has given a few Thrush notes answering to our call, but no song. He is having to eat the food prepared for such birds, with carrot, and, when the weather permits, he has cooked squash, cranberry sauce, apple, meat and potato; but the Mockingbird food is the only thing that does not freeze solid, and he is fond of it.

We have had the coldest, hardest winter known here for many years, and it certainly is very wonderful that he has survived.—Mrs. Carroll E. Bowen, *Rochester, N. Y.*

A Large Phœbe's Nest

There is a suggestion in the picture of 'A Large Phœbe's Nest' on page 199 of November and December Bird-Lore. A Black Phœbe built her nest in a cigar-box which I had nailed under the eaves of the stable. The top of the box was several inches beneath the sloping eaves directly above it. She raised a brood in March, and, re-lining the nest, again in July. Next year she commenced operations in the same nest, when a Linnet took possession in the absence of Phœbe. Linnet built an addition to suit herself, continuing the nest straight up, with the line of demarcation very plain between the mud and lichens of Phœbe and her own straws and cotton. Phœbe watched her chance and took possession as soon as the young Linnets had gone, building the nest a little higher. Next year Linnet got it first, and so she and Phœbe alternated until seven stories rose above the original design. The structure began to lean a little, and then the Swallows took it and built out toward the east their bottle nest. The mud was too heavy and the whole sky-scraper or, better, eaves-scraper, tumbled to the ground. Mr. Stone's picture suggests three stories nicely made. I have known the Linnets to lay story after story in nests of their very own year after year.—Elizabeth Grinnell, *Pasadena, California.*

A Swallow and Flycatcher Feud

In a ranch-house snug against the foothills in western Texas there lived for many years an old Judge who was a good friend of the birds. He never allowed any shooting on his premises, and when we were there the trees and bushes around the house were alive with birds, while his piazza was possessed by a pair of the buff-breasted, black-tailed Say's Flycatchers, and several families of the blue-coated Barn Swallows.

For three years the Flycatchers had been contesting the ground with the Swallows. To encourage the Swallows, the Judge had nailed a piece of tin under two of the piazza rafters, and the birds had shown their appreciation of his kindness by promptly building there; but, sad to relate, no sooner had they finished the feather lining of the nest than the Flycatcher fell upon them and evicted them from their own premises.

At the time of our visit, Saya was serenely brooding six white eggs in the Barn Swallow's nest; but, not content with her conquest, whenever the mood seized her she would send the whole colony flying from the piazza and light in a tree, snapping her bill and shaking her tail with deplorable gusto.

The old friend of the Swallows watched the usurpers with disapproval, and exclaimed emphatically, "If they don't quit that monkey business I'll have to stop it. The Swallows were here first." Then, looking fondly at his favorites, he added, with enthusiasm: "I have a string stretched across the piazza, and they come and sing to me while I read. I wouldn't have them disturbed for twenty dollars apiece."—Florence Merriam Bailey, *Washington, D. C.*

Book News and Reviews

THE BIRDS OF OHIO. A complete scientific and popular description of the 320 species of birds found in the state, by WILLIAM LEON DAWSON, A.M., B.D., with introduction and Analytical Keys, by LYNDS JONES, M.Sc. Illustrated by 80 plates in color-photography and more than 200 original half-tones. Sold only by subscription. Columbus. The Wheaton Publishing Co. 1903. 4to. xlv+671 pages.

This volume should exert a marked and far-reaching influence, not only on the study of birds in Ohio, but on the general attitude of the people of the state toward its feathered inhabitants. The book's real worth will commend it to the student, its beauty will claim the admiration of the bibliophile, and its size alone will command the attention of that not small portion of the community whose measure of values is one of dimensions.

The present, however, is a case of quality as well as quantity. We are given keys to orders, families and species; detailed descriptions of plumage, with a special paragraph for "Recognition Marks," descriptions also of nests and eggs, and a statement of the "general" as well as Ohio range of every species. Then follows biographical matter, with very frequently a photograph from nature of the bird or its nest, or its characteristic haunts. Lack of space forbids detailed criticism, but we may say in brief that the authors have given us the most attractive and valuable work on the ornithology of a single state which has yet appeared.—F. M. C.

WITH THE BIRDS IN MAINE. By OLIVE THORNE MILLER. Boston and New York: Houghton, Mifflin and Company. 16mo. ix + 300 pages.

We are very glad to welcome this new volume of bird studies by Mrs. Miller. There are few writers who have succeeded so well in expressing the potentialities of bird companionship; who so clearly voice the pleasures of making friends with and of the birds.

Some fifty species of birds receive greater or less attention in this book, most of the studies being made in Maine.—F. M. C.

CASSINIA: PROCEEDINGS OF THE DELAWARE VALLEY ORNITHOLOGICAL CLUB, VII, 1903. 8vo. 88 pages.

The proceedings of this active organization always contain much matter of general ornithologic interest. In the present number, for example, the papers by Witmer Stone on "John Kirk Townsend," by S. N. Rhoads on the disappearance of the Dickcissel from the Atlantic slope, by H. L. Coggins on the travels and flight lines of Crows in southeastern Pennsylvania and the adjoining portions of New Jersey, and by W. L. Baily on a night flight of birds at Mt. Pocono, are not only unusually readable but exceptionally valuable. There are also contributions by Spencer Trotter, 'The Red-headed Woodpecker as a Pennsylvania and New Jersey Bird,' J. A. G. Rehn, 'Notes on the Summer Birds of Lehigh Gap, Pennsylvania,' and H. W. Fowler, 'Water Birds of the Middle Delaware Valley.' Mr. Stone presents a 'Report on the Spring Migration of 1903,' based on observation by numerous club members and others living near Philadelphia, and there is an 'Abstract' of the proceedings of the club for 1903. It appears that the average attendance of members for this period was twenty. Is there any other local ornithological club in the country with so good a record? If not, why not?—F. M. C.

BIRDS OF CALIFORNIA: An introduction to more than three hundred common birds of the state and adjacent islands. By IRENE GROSVENOR WHEELOCK. With ten full-page plates and seventy-eight drawings in the text by Bruce Horsfall. Chicago: A. C. McClurg & Co. 1904. 12mo. xxviii + 578 pages.

This book is a noteworthy contribution to the literature of ornithological biography. The author states that "field notes begun in 1894 . . . form the basis of the following pages" and give a list of twenty localities

from the Colorado River and San Diego to Mt. Shasta; from the Farallones to Tahoe, at which she has pursued her studies of birds chiefly during the nesting season.

The most important result attending her observations on the life of the nest is expressed in the statement "that the young of all macrochires, woodpeckers, perching birds, cuckoos, kingfishers, most birds of prey, and many sea-birds *are fed by regurgitation from the time of hatching through a period varying in extent from three days to four weeks, according to the species.*" The author adds: "Out of one hundred and eighty cases recorded by the author, in every instance where the young were hatched in a naked or semi-naked condition they were fed in this manner for at least three days."

Few American ornithologists, we imagine, are familiar with the feeding habits while in the nest of one hundred and eighty species of birds, and Mrs. Wheelock's evidently wide experience commands for her observations the respectful consideration of those who have not been privileged to have her time and opportunities for field work.

Her biographies abound with interesting and novel descriptions of the habits of birds. The individual is sometimes made to stand for the species, and it remains for students of Californian bird-life to ascertain whether many of the observations presented are normal or exceptional. The book should therefore prove a potent incentive to California field workers, and assuredly no one who proposes to study the habits of birds in the West can afford to be without it.—F. M. C.

The Ornithological Magazines

THE AUK.—The January number, while bulky, is filled with good reading and is well illustrated. The report of the A. O. U. bird protection committee by William Dutcher occupies over one-half of the 208 pages, and covers in detail the work of legislatures, wardens and Audubon Societies. Most gratifying results have been effected with slender means, although the details of this very long report almost smother the facts which might have been made more readily available by judicious summarizing and tabulation.

W. K. Fisher has secured most interesting pictures of the Albatrosses of Laysan Island, where the clumsy birds bow and dance and even apparently execute cakewalks. His avi-biography of this immense nation of strangely tame birds reads like the fairy tale of an unknown land. A. C. Bent writes on the 'Nesting Habits of the Herodiones of Florida,' illustrating with photographs the nests and young of the Roseate Spoonbill and White Ibis, while a good portrait and sketch of the life of the late Thomas McIlwraith is furnished by A. K. Fisher. A couple of local lists deserve attention; one by E. S. Currier on the 'Summer Birds of the Leech Lake Region, Minnesota,' the other by O. Widmann on 'Yosemite Valley Birds.' The latter, although an 'opera-glass' list, is accurate and sets a standard for the possibilities of this sort of observation.

There is an extremely readable article by Spencer Trotter on 'Some Nova Scotia Birds,' and one by H. H. Kopman on bird migration near New Orleans. The arrival of fall migrants in numbers early in August bears out the testimony of other observers, but whether these birds are all adults, as has proved to be the case elsewhere, is a matter for future investigation. Other titles for the reader not already surfeited, are 'The Correct Name of the Pacific Dunlin,' by S. A. Buturlin; 'An Abnormal Bill of *Melanerpes portoricensis*,' by B. S. Bowdish, and 'The Exaltation of the Subspecies,' by J. Dwight, Jr. Those who have their 'Auks' bound without covers should be warned that the back cover contains 'Publications Received,' which has heretofore been paged as a part of 'Recent Literature.' This department, by the way, opens with a timely and pertinent review of some of the stuff that the rage for nature fiction has called forth.—J. D., Jr.

THE CONDOR. — The sixth volume of 'The Condor' opens without special announcement beyond the statement that the

record of the past year may be taken as a guarantee of the standard for 1904. This is certainly very satisfactory as far as illustrations are concerned, if the frontispiece of the California Vulture from a drawing by Fuertes and the half-tones from Beck's photographs of Galapagos Island birds are samples of the illustrations which are to follow.

Under the title, 'Afield at Flathead,' Silloway contributes some interesting notes on several birds, and reports on the condition of the colony of Holboell's Grebes at Swan Lake during the past summer. Mailliard publishes some important records supplementary to Grinnell's 'Check List of California Birds,' and includes the first record of the occurrence of the Rusty Blackbird (*Scolecophagus carolinus*) in the state. Swarth discusses the subspecies of Cactus Wrens which have been recently described, and also records the capture of a Scott's Oriole in the San Fernando Valley on November 2, 1903. Under the name of *Regulus calendula cineraceus* Grinnell describes the Ruby-crowned Kinglet from Mt. Wilson, Los Angeles county, Cal., as a new subspecies. The number closes with a 'Directory of Members of the Cooper Ornithological Club,' from which it appears that the Club now has about 200 members and since its organization has lost 13 members by death.—T. S. P.

Bulletin of the Michigan Ornithological Club.—Four quarterly numbers of the revived 'Michigan Bulletin' have been issued, completing Volume IV. These are creditably edited and contain many valuable contributions, relating mainly to the ornithology of the state which the Club represents.

Perhaps the most important paper in the June number is that by Mr. A. B. Covert, on 'The Recent Capture of a Kirtland's Warbler in Michigan,' and several supplementary notes describing the discovery of the nest and eggs of this rare bird by N. A. Wood. In the September number, besides several papers dealing with the nesting of various birds in the state, we have an interesting reminiscence by Mr. James B. Purdy on 'The Passenger Pigeon in the Early Days of Michigan,' in which he describes the methods of trapping these birds in vogue during his boyhood.

In the December number of the Bulletin Mr. J. Warren Jacobs contributes some supplementary 'Purple Martin Notes,' from Waynesburg, Pa., while E. G. Mummery writes of the 'Nesting of the White-breasted Nuthatch,' and Edw. Arnold on the Sandhill Crane. Numerous shorter notes testify to the activity of the Club.—W. S.

Journal of the Maine Ornithological Society.—The January number marks the beginning of Vol. VI, under the editorship of Mr. J. Merton Swain. The Journal has been largely devoted to local ornithology and has increased in size and importance since the organization of the Society. Mr. A. H. Norton continues his 'Notes on Maine Finches,' while an account of the eighth annual meeting of the Society, several popular articles and some local notes make up the number.

It would seem particularly desirable that the various journals now issued by local ornithological clubs should,—as they do in a measure,—devote themselves exclusively to the birds of their own or immediately adjoining states. They thus acquire a peculiar value in our ornithological literature and have a definite function to fulfil.—W. S.

We take pleasure in announcing that Mr. Witmer Stone has joined Bird-Lore's force of reviewers.

The November, 1903, issue of the Bulletin of the New York Public Library (VII, 11, pp. 407–446) contains a series of letters written by Sir Charles Blagden to Sir Joseph Banks, while the former, as an officer in the British Navy, was stationed at Charleston, Reedy Island, Delaware, New York and Newport during the Revolution. These letters contain much interesting natural history material, and an annotated list of specimens, chiefly of birds and fish collected in Rhode Island, is of genuine scientific value.

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Bird-Lore's Motto:
A Bird in the Bush is Worth Two in the Hand

DURING April and May the Editor expects to be afield, often beyond the reach of mail, and he begs the indulgence of his correspondents during this period.

Birds and Farmers

The investigations of economic ornithologists have so clearly established the value of birds to the farmer that one might imagine their labors ended with the publication in easily accessible form of the results of their work. The average farmer, however, is the most conservative of men. His knowledge of agriculture has usually been gained by the hard, expensive, practical experience of many years. He is self-reliant and consequently regards innovations in methods of fertilizing, planting and tilling with more or less distrust and adopts modern ideas with caution. He is so constantly at war with the elements and nature that he is apt to believe that every living creature, from man to grubs, is the farmer's especial enemy. A Cooper's Hawk is seen capturing a chicken and all Hawks are condemned; Crows pull his corn and Robins eat his cherries, and birds in general become grain and fruit thieves.

Insects, furnished with an artificial food-supply by certain crops, become so abundant that it is difficult for him to believe that birds are in any sense a check on the increase of insect life. We recently heard a prominent fruit-grower, president of a horticultural society, state before a legislative committee that he didn't believe birds were of the slightest value to the fruit-grower, who, in his opinion, would be just as well off if there were no birds at all. He had to spray anyway, and it would be just as easy to spray a little more and let the birds go. He unfortunately failed to say whether he would extend his spraying operations to all vegetation subject to insect-attack, though it is quite probable he would have been willing to let the world take care of itself, provided his orchard was preserved.

A writer in 'The Rural New Yorker' says, "Farmers and fruit-growers surely have the right to expect accurate information as to the economical value of the wild birds likely to be encountered on the farm, from the many official investigators employed by colleges and experiment stations; but the actual status of certain species, according to common observation, is widely at variance with that assigned by writers and teachers of ornithology." A bird's economic value, however, is not to be ascertained by "common observation." A very uncommon kind of training is required to fit one properly to study the food habits of birds and to learn therefrom the place of the species in the economics of nature and agriculture. Nor can the best equipped observer hope to reach satisfactory conclusions merely from observing the bird out-of-doors. This is an important side of his work, but it must be supplemented by detailed stomach analyses wherein he avails himself of the services of specialists in other departments of science—entomology, botany, mammalogy, etc. Furthermore, the investigators in this field are not "many" but pitifully few, nor can we hope that the subject will be adequately and thoroughly studied until each state in the Union realizes its importance, and takes the steps needed to inaugurate a series of investigations. No individual, unaided, can conduct successfully thorough studies of the food of birds. If the farmers and fruit-growers, therefore, will aid the economic ornithologist he will be very glad to avail himself of their assistance, and in the end they will be benefitted by the researches to which he is devoting his life and which are made in the agriculturists' interests.

The Audubon Societies

"You cannot with a scalpel find the poet's soul,
Nor yet the wild bird's song."

Edited by MRS. MABEL OSGOOD WRIGHT and WILLIAM DUTCHER

Communications relating to the work of the Audubon and other Bird Protective Societies should be addressed to Mrs. Wright, at Fairfield, Conn. Reports, etc., designed for this department should be sent at least one month prior to the date of publication.

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A Word to the Wise Concerning Trees, Etc.

In many of the various reform movements it is not always a question of what to do, but what to let alone. In our efforts to give the native birds all the legal protection possible we must remember that we can in no way coerce the birds themselves to remain in given localities, if we by our zeal for so-called agricultural thrift and village improvement render those places unsuitable for bird residence.

The farming population in general has always had a fatal habit of going out in the between seasons of sowing and reaping and doing direful things in lanes and along field edges with stub scythe and bush-hook, two instruments that, to my mind, should be proscribed by law; but lately a new element has entered the field,—the amateur who buys up the old farm, in a sightly location, for a summer home, and this class is now legion.

This biped usually has some sense of the picturesque, and yet the first thing he does is to hire a stupid Slav to "clean up" the underbrush while he is formulating his plans. Now take it the year round, underbrush, i.e., briers, bushes of all sorts, from the spreading juniper growing beneath the

height of forest trees, up through alders, bayberry, barberry, dogwoods, white birches, cedars, to choke- and black cherries of tree size, is of greater importance to bird-life than the forest trees themselves. Yet the man who will rightly hesitate to fell a decrepit elm because it harbors the Baltimore Oriole or a Robin or two in high crotches, will thoughtlessly order the wholesale clearing of some brush lot with its pointed cedars, through which perhaps a little water-course wends its way, and in so doing dislodge the homes of a bevy of Yellow-throats, Chats, Indigo-birds, Thrashers, Catbirds, Redwings, etc., besides drying up the water-course and fatally interfering with the cover and food-supply of our winter residents, even including the game-birds.

We make resolutions every time that spring retouches us with its magic and the spirit of forestry whispers to plant more trees to shade our water-courses, more trees to intervene between ourselves and the sun, more trees to yield shelter and food to the birds, in foliage, fruit, and bark crevices; and it is good to plant, but better yet to refrain from destroying. The tree or bush we plant may or may not be suitable to the location and grow, that which we destroy has already proved itself by flourishing, and we may judge of its merit by experience. Also the responsibility of replanting and introducing perhaps new species of wild fruits into a locality is almost as great as that of importing new species of birds. For instance, the black wild-cherry (*Prunus serotina*) of the middle states, growing in bushy clumps when headed back, but, left alone, growing to be a large tree, is a fashionable summer resort for birds of high and low degree for six weeks or so, when they collect from far and wide to take a course of its fruit in all states of ripeness and unripeness.

One would naturally think it a tree to be planted freely in time of need, even as the birds themselves sow it freely, *via* the undigested stones of the cherries they swallow. Instead of which, it is a species doubly to be avoided. In the first place, it harbors the unsightly nest of the tent-caterpillar, one of the greatest blots on the wayside landscape, and, secondly, it is highly dangerous to a cattle-grazing country or for the home pasture, as the leaves eaten *when withered*, owing to the prussic acid in them, will destroy cattle by a sort of paralysis of the lungs, and as the species is prone to be wind-broken on slight provocation, the extent of its mischief can be easily estimated.

Alders for screening, the flowering dogwood and magnolias (whose berries are beloved of the Hermit Thrush), grape-vines, black currants, and the hardiest varieties of raspberries and blackberries are all safe things to plant near tumble-down walls if there is a sufficient depth of soil. The white-flowering elder, with its flat clusters of rich juicy berries, will flourish in any damp spot, as will also the winterberry (*Ilex verticillata*), while the Chinese honeysuckle and the Virginia creeper should be scattered broadcast for the sake of their berries.

One tree there is that should be regarded as a thing sacred, like the oak, and equally protected — the red Cedar, which, like the red man himself, retreats before cultivation and is almost unplantable. Its closely twigged branches make it impervious to storm and offer a fine winter roost, and its purplish berries with the hoary bloom yield living rations when all below is frozen and inaccessible—nay more, when laid low by storms its very broken branches are in themselves a city of refuge. To a fallen cedar top, meshed with vines and lying near a tumble-down wall of an empty farm, was I in debt last year for the joy of having a pair of Carolina Wrens and their two broods for neighbors. But alas! what will happen if the new purchaser of the land 'improves' his back fence?—M. O. W.

National Committee Notes

By the Chairman

"Or what man is there of you, whom, if his son ask bread, will he give him a stone?" Two months since, the Chairman asked for promises of aid in the important matter of incorporation of the National Audubon Committee, in order that it might be in a position to appeal to the public for

a permanent endowment fund. Not a suggestion or helpful word has been received. Is not this giving a stone when bread was asked? Bird-protection work has only just commenced, and the several societies must not consider their duty done if they look well after their local interests; there is the broader field of national work that must be carried on by the joint efforts of each society; the strong must help the weak. The Heron Leaflet, Educational Leaflet No. 7, has been called for from unexpected quarters. The Millinery Merchants' Protective Association asked for 500 copies, to be distributed among its members, and a prominent wholesale millinery firm in Ohio sent for 1,000 copies, which they volunteered to distribute among their customers. The British Society for the Protection of Birds sent for 2,500 copies, as they desired to send one to each subscriber to their organ, "Bird Notes and News." The press noticed this leaflet more freely than any other publication ever issued by the National Committee, some papers publishing the entire text, with an illustration.

The suggestion of the National Committee that the children of the country feed the birds during the severe winter weather was sent out as a news item by the Associated Press, and undoubtedly was the direct means of saving thousands of birds.

Legislative matters are in a ferment at the present time. In Rhode Island a bill has been introduced to prohibit the sale of Ruffed Grouse and also to make the close season for shore-birds from January 1 to July 15, thus preventing the wasteful practice of spring shooting.

In New Jersey the bill to permit the killing of Robins, Highholders, Catbirds and Meadowlarks was defeated by an almost unanimous vote. In Virginia an effort is being made to repeal the anti-spring-shooting law for shore-birds passed in 1903; also, to take protection from Doves, Hawks, Owls and the Nighthawk. The result is still doubtful, notwithstanding the efforts of the National Committee and several senators and delegates who worked so faithfully last year for the passage of the excellent law now in force in Virginia. In South Carolina a bill was introduced following the A. O. U. model law, but was adversely reported by the Committee on Agriculture to whom it was referred. They recommended "that it be not passed, as it was too sweeping." It is evident that a large amount of education is needed in South Carolina when an agricultural committee refuses to recommend a law which was especially intended to benefit the farmer and protect their interests.

In Mississippi a non-game-bird bill was introduced and was almost unanimously passed in the House of Delegates. It is now before the Senate and will probably become a law, as Gov. A. H. Longino, in his annual message to the Legislature, recommended "that a law be passed protecting from slaughter all birds, except game-birds, throughout the entire year." In Iowa the model law is before the Legislature, but its adoption is somewhat doubtful, although the State Audubon Society and the National Committee are doing all that is possible to push it. A bill to prevent trap-shooting of tame Pigeons was passed and is now a law.

Truly the Audubon Societies have much educational work still to do. The millennium period of bird-protection is still far distant, especially the phase connected with legislation.

Audubon work is progressing finely. In Maine the Ornithological Society has just appointed a committee of five members who desire to place their state in the front rank of bird protectors and lovers. In Colorado a second Junior Audubon Society was organized February 22, with over 340 charter members. This is excellent work, and the National Committee recommended that the several state societies push this branch more diligently. In Alabama there is every probability that an Audubon Society will be organized in a short time. In Michigan, also, active steps are being taken by the Ornithological Society to advance Audubon methods, and to that end Mr. T. Jefferson Butler has been elected the Audubon Secretary. A society will, undoubtedly, be organized in California before the next issue of BIRD-LORE. Funds for the work of the

National Committee are coming in rather slowly. However, the wardens will all be re-engaged for the coming breeding season, trusting that before pay-day is reached the necessary money for wages will be in hand. Mayhap some person will read these lines who will be touched by our necessities and will give the initial $10,000 to start the permanent endowment fund.—W. D.

Public Sentiment and Bird Protection

Though it is not yet true of some of the southern states, it is probably no exaggeration to say that in nearly all the rest of the union the people who favor bird-protection laws that will really preserve our useful and harmless species of birds and animals, and not simply postpone a little their final extinction, now greatly outnumber those who oppose them, and that they could have their own way if they would insist upon it.

Market gunners and plume hunters, those who make a special business of dealing in game, the semi-professional sportsman who spends all his time in shooting, are but an insignificant portion of our population, but they are doing most of the harm.

They make their desires known, they express their opinions, and use their influence and money to be allowed to continue their destructive work. For the future they care nothing; they would willingly shoot the last Wild Turkey or Wood-duck for sport or for sale. They want their fun, and their agreeable way of making a living by destroying and selling the game which is the property of the whole body of citizens of their respective states.

That the determination and activity of this small minority is able to make futile the work of the far more numerous class which is opposed to them, is due to the indifference and negligence of the latter, not to a lack of power to assert its rights and protect its property.

Assuming that you take a personal interest in bird protection, do you realize that it is the duty of those so interested not to hide their opinions and desires under a bushel but to make them known and felt? They will be surprised to find how many people will agree with them. How can those intrusted with the making and enforcement of our laws know what the opinion of the public really is about a matter where only one side, and that a small minority, make themselves heard? Most of us do not wish, in fact most of us are not in a position where we can afford to lose the good will of those about us by undue activity in criticizing or making complaints. We do not always need to. We can do as much good, or often more, by encouraging or helping those who are doing well, as by finding fault with those who are not.

Is there any society in your town or state which is working for bird protection? If so, have you taken interest enough to join it? Probably you are not so situated that you can take an active part in their work, but every name, even an obscure one, added to their membership list encourages and increases the influence of those who can and do work. They are meeting with much opposition, and, what is still worse, indifference, and they need all the backing up that we can give them.

Have you a representative in your district who works hard for better game-laws, or would work for them if he thought the people wanted them, or a game-warden who is diligent and courageous? If so, you may be sure that many people are doing their best to make trouble for him. Does he know that he has your approval and sympathy, and do you ever call the attention of others to his good work? Is it not likely that a word of thanks or encouragement, if you know them, or a note of a few lines expressing your appreciation of their services, even from a stranger, would do more good than ten times the amount of complaint and criticism directed against people who are probably indifferent to it?

We should not forget that each of us is, according to law, a part owner of the birds which are being exterminated for the amusement and gain of a comparatively few individuals, and that, as in the case with property of other kinds, we must either provide for their preservation or lose them entirely.—Willard G. Van Name.

NATIONAL COMMITTEE OF AUDUBON SOCIETIES

EDUCATIONAL LEAFLET NO. 8

THE MARSH HAWK

Order—*Raptores*

Suborder—*Falcones*

Family—*Falconidæ*

Genus—*Circus*

Species—*Circus hudsonius*

The Marsh Hawk

By WILLIAM DUTCHER

Chairman National Committee of Audubon Societies

DESCRIPTION

Adult Male.—General appearance above bluish gray, darker on hindneck and lower back. Terminal half of long wing feathers almost black. Tail bluish, with seven or eight blackish bands; all except two central feathers with much white. Under parts, throat and upper breast ash-gray; all of balance white, quite profusely decorated with light brown dashes, lines and heart-shaped spots.

Adult Female.—General appearance above dark brown, some feathers with large whitish or light cinnamon-brown spots; tail brownish, broadly barred with blackish and very pale cinnamon. Under parts of body whitish, profusely marked with very large shaft streaks of pale hair-brown on breast and cinnamon-brown on lower belly and thighs. Under parts of wings and tail very broadly barred with whitish.

Immature.—Somewhat similar to female but darker above and under parts almost entirely rich rufous, streaked with black on upper breast and flanks. Bars in tail cinnamon instead of whitish.

Size.—Male, from end of bill to tip of tail about 19 to 20 inches; female is much larger, 22 to 24 inches. Both sexes have black bills and claws and yellowish or flesh-colored legs and feet.

Distinguishing Marks.—The owl-like disk of short feathers about face; the very long tail; the very conspicuous patch of white feathers at base of tail, which show distinctly when flying; the slow, deliberate manner of flight, which is usually close to the ground.

Nest.—Always placed on ground in marsh, meadow or prairie, in high grass, rushes, or at foot of bush. It is made of dry grasses, reinforced by small sticks, and is lined with a few feathers.

Eggs.—Usually from four to six in number, of a pale greenish or bluish white color, usually unmarked, although some are blotched or spotted with pale buff or brownish.

Distribution.—The Marsh Hawk inhabits all of North America, breeding from the south Atlantic States as far north as Alaska and the Hudson Bay region. It winters from about 40 degrees north latitude as far south as Panama.

NOTE.—The description of the adult female given above is from a more than usually interesting specimen. It bears three labels, one of them being in the handwriting of John James Audubon, as follows: "Female, June 23/43 Fort Union." The second label, reads, "Coll. of G. N. Lawrence, Circus hudsonicus, ♀, b.38"; on the reverse of this label in the handwriting of Mr. Lawrence, is "Presented by V. G. Audubon from the collection of J. J. Audubon, ♀, Missouri." The third label is that of the American Museum of Natural History. Although this specimen was prepared over sixty years ago, it is in a fine state of preservation.

This Hawk is commonly known by three popular names, each of which relates to a special characteristic of the bird. Marsh Hawk, because it is found about marshes, meadows or prairies; Mouse Hawk, from its fondness for these small but destructive vermin, and Harrier, from its habit of continually hunting or ravaging the homes of small mammals. It is one of the most useful and valuable of all the Hawks, and the agriculturist should under no circumstances ever permit one to be killed on his premises. No person can fail to recognize the Marsh Hawk on sight, from its very peculiar slow wing-beats, its proximity to the ground either in marsh or

meadow; its long wings and tail, and especially the large white patch at the base of the tail above. There is certainly no excuse for killing the Marsh Hawk because of mistaken identity. All of the data regarding the food of this species of Hawk shows that it lives very largely upon a class of rodents, that do the farmers and fruit-growers of the country incalculable damage in destroying forage crops, and especially in eating the bark from young orchard trees and thus killing them. At a recent meeting of horticulturists in New Jersey, one of the members present stated that during the present winter, owing to the deep snows, mice and rabbits had damaged his orchards to the extent of $2,000. In Kansas rodents are a scourge so great that

"Since January, 1902, the demand for poison has continued steady, and large quantities have been sold, especially for the destruction of prairie-dogs and pocket-gophers. Up to the present time there has been consumed about twelve hundred pounds of strychnine and over half a ton of potassium cyanide in manufacturing poison. From 600,000 to 700,000 acres of land, formerly infested with prairie dogs, have been entirely reclaimed, while a partial destruction of them has been accomplished over a much larger area. The destruction of pocket-gophers has been accomplished over many small and widely scattered areas, including some of the best alfalfa ranches in the state. This work, however, has thus far not extended over sufficiently large areas to be permanent; further and united efforts only will produce results which will prevent loss to alfalfa growers from the presence of this pest." (From Press Bulletin, No. 130, Kansas State Agl. College.)

Kansas, like many other states, gives no protection whatever to Hawks, although scientific research shows them to be immensely valuable aids in killing rodents. Poisons cost the farmer money, besides labor in distributing, and then do good only if the rodent eats the bait; on the other hand, the Marsh Hawk is always hungry, and during the long hours of daylight is incessantly coursing back and forth hunting for food. It works continuously without pay, and deserves legal protection as well as the care of every person who tills the soil. The contents of 124 stomachs examined by the Biological Survey, United States Department of Agriculture, shows that 45 per cent had been feeding on mice, 18 per cent on other small mammals, 18 per cent on reptiles, frogs and insects, and a low percentage on poultry and small birds. Dr. A. K. Fisher, who wrote the exhaustive and valuable report quoted from above, says:

"Although this Hawk occasionally carries off poultry and game-birds, its economic value as a destroyer of mammal pests is so great that its slight irregularities should be pardoned. Unfortunately, however, the farmer and sportsman shoot it down at sight, regardless or ignorant of the fact that it preserves an immense quantity of grain, thousands of fruit trees and innumerable nests of game-birds by destroying the vermin which eat the grain, girdle the trees, and devour the eggs and young of the birds. The Marsh Hawk is unquestionably one of the most beneficial as it is one of our most abundant Hawks, and its presence and increase should be encouraged in every way possible, not only by protecting it by law, but by disseminating a knowledge of the benefits it confers. It is probably the most active and determined foe of meadow-mice and ground-squirrels, destroying

greater numbers of these pests than any other species; and this fact alone should entitle it to protection, even if it destroyed no other injurious animals."

Only fourteen states protect the Marsh Hawk; thirty-five states and territories permit it to be killed at any time. In the British Provinces, Manitoba is the only one giving protection. The ignorance regarding hawks and the prejudice concerning them is forcibly illustrated by the action of Virginia, which in 1903 passed a law protecting all the beneficial Hawks and Owls, but without waiting to give the statute a fair test repealed the same in 1904. In Ohio the present legislature is considering a bill offering bounties on "Chicken Hawks." This, of course, means, should the bill become a law, that all Hawks will be killed for the bounty, and the farmers of the state will be taxed for funds with which to pay pot hunters and others for the heads of birds that are of great value to agriculture.

In 1885 Pennsylvania passed a bounty or scalp act which was shortly afterward repealed, as it was found to be most disastrous in its effect. Over $60,000 was paid the first year for bounties. Among other reasons urged for a repeal of the law was the following: "Officers were imposed upon and bounties were illegally drawn." "It encouraged a certain class to follow hunting as a means of livelihood, to the exclusion of other labor." "It is burdensome and inimical to the best interests of the farming community, and a useless expenditure of county money."

Does not this show a lamentable degree of ignorance on the part of those who should be the most interested in the protection of Hawks? Every farmer in North America who reads this leaflet should at once commence a campaign of education among his fellow workers, and should make it a prominent plank in his political platform that all the beneficial Hawks should have legal protection. Farmers! Do not expect your neighbor to do his duty until you have done your own.

Study Points for Teachers and Students

Where is this Hawk found in summer? In winter? Where does 40 degrees north latitude cross the continent? What is the most striking difference in plumage of the adults? How does young differ? What is the most striking distinguishing mark to be seen when flying? What are popular names? Why given? Why is this Hawk so beneficial? Describe the small mammals it eats. What damage do they do? Which of them are found where you live? What other pests does this Hawk eat? Can you give any personal reasons why this Hawk should be protected?

For much valuable information regarding the Marsh Hawk, study the following: Bendire's 'Life Histories of North American Birds,' Fisher's 'Hawks and Owls of the United States,' also Fisher's 'Hawks and Owls from the Standpoint of the Farmer.' This latter is a pamphlet issued for free distribution by the United States Department of Agriculture.

Additional copies of this leaflet may be procured of William Dutcher, chairman, 525 Manhattan Ave., New York City.

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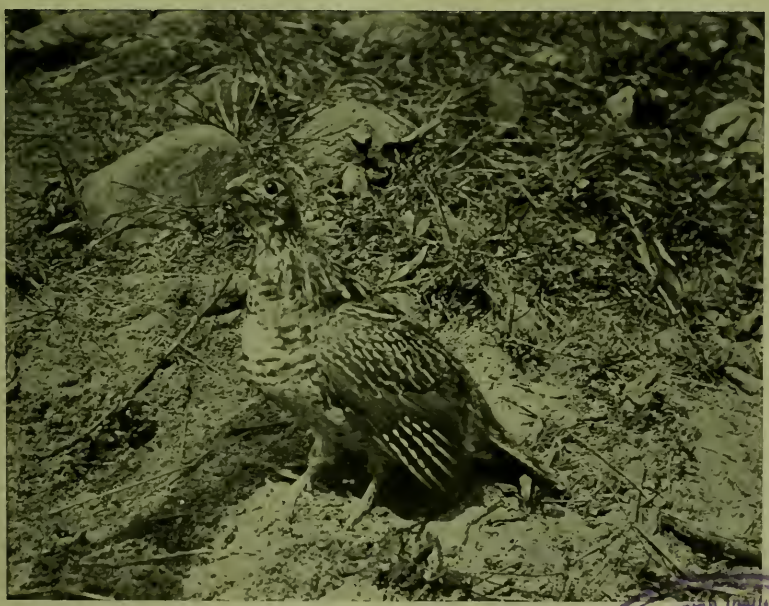

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Subscribers whose subscription expires with the present issue will find a properly dated renewal blank in their magazine. In the event of a desire not to renew, the publishers would greatly appreciate a postal to that effect.

☞ **To subscribers whose subscription expired with the issue for December, 1903,** and who have as yet neither renewed their subscription nor, in response to our request, sent us a notice to discontinue their magazine, the present number is sent in the belief that the matter of renewal has been overlooked. We trust it will now receive prompt attention.

Complete sets of Volumes I, II, III, IV and V of 'Bird-Lore' can still be supplied.

Every number of 'Bird-Lore' is as readable and valuable today as when it was issued, and no bird-lover who is not already supplied can find a better investment than back volumes of this magazine. Vols. I, III, IV and V are offered at the subscription price of $1 each, postpaid; the price of Vol. II is $3.

Entered as second-class mail matter in the Post Office at Harrisburg, Pa.

1. Blue-winged Warbler, Male.
2. Blue-winged Warbler, Female.
3. Lawrence's Warbler, Male.
4. Brewster's Warbler, Male.
5. Golden-winged Warbler, Male.
6. Golden-winged Warbler, Female.

(One-half natural size.)

Bird-Lore

A BI-MONTHLY MAGAZINE
DEVOTED TO THE STUDY AND PROTECTION OF BIRDS

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. VI MAY — JUNE, 1904 No. 3

A Tame Ruffed Grouse*

By CARLTON D. HOWE

With photographs from nature

WHILE at my home in Newfane, Vermont, last summer, reports came to me that a farmer in the neighborhood had upon his farm a Ruffed Grouse that was comparatively tame. Of course, being interested in this report, I interviewed Mr. Rand, the farmer, and received from him the following facts: In August, 1902, while picking blackberries, he discovered a flock of seven young Grouse about half grown. They remained near by, within twenty or thirty feet, for an hour or so, showing little evidence of fear. The parent bird was not seen.

About the first of the next October, while Mr. Rand was picking apples, he was surprised to see a Ruffed Grouse walk out of the bushes and come up under the tree where he was at work. The bird did not appear afraid, but much interested in what the farmer was doing, walking around him and observing him from all sides, finally hopping on the wall, as if to superintend the apple-gathering. The bird stayed with the farmer at least two hours, and when he went away he left it under the tree.

In the following spring, while working in the field, Mr. Rand noticed a Grouse following his farm-wagon. The bird was undoubtedly his old friend, seeking to renew the acquaintance of the preceding fall. The Grouse followed the wagon, perhaps fifty rods, until she came in sight of the farm buildings, where she stopped and waited for the wagon to come back again, and then accompanied the team down to the field. The Grouse repeated this performance for several weeks. In fact, almost every time the farm-wagon made its appearance in the field, the bird was on hand to escort the team back and forth.

As the Grouse continued to grow less shy, Mr. Rand conceived the idea of making her tamer by offering her food and talking to her. The bird very seldom ate any of the different kinds of food which he offered her.

* Read before the third annual meeting of the Vermont Bird Club, January 22, 1904.

Only once did she deign to take a few kernels of corn into her mouth. By much coaxing, he finally succeeded in touching the bird. After that the Grouse showed very little fear. When Mr. Rand called "Chickee," "Chickee," the bird would come out of the woods and sit upon his knee. From his knee she would fly to his shoulder, and then to the ground. The bird would repeat this performance a half dozen times, clucking contentedly the while.

A RUFFED GROUSE AND HER PROTECTOR

One day Mr. Rand brought the Grouse to my home, a distance of three miles, to have photographs taken of it. To make sure she would not get away, he attached a long cord to the bird's leg; which precaution, however, was not necessary, as the Grouse showed little fear among strangers. The accompanying picture shows the Grouse resting confidingly in his hands. Our bird upon this day made many new acquaintances, for every one was interested and wished to experience the novelty of holding a live Ruffed Grouse, a bird so proverbially shy and wild, in his hand. At least thirty people handled the Grouse before the farmer returned the bird to her native home in the woods.

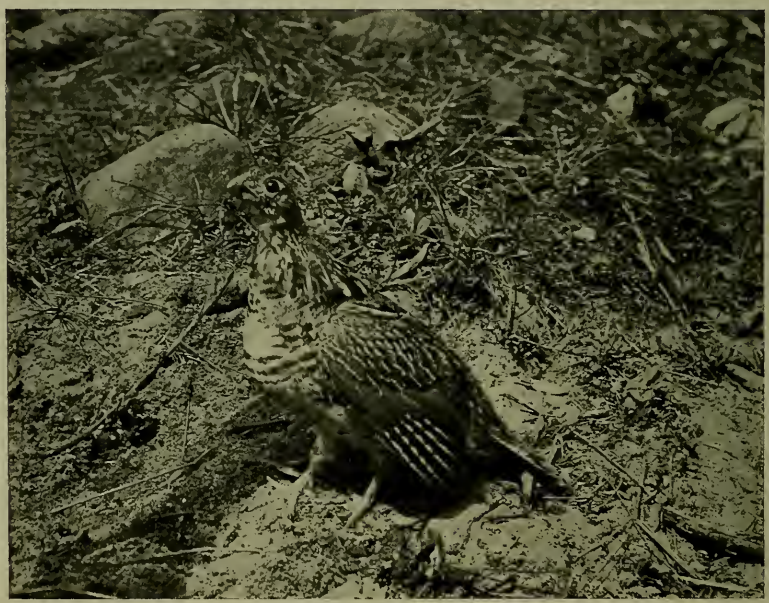
A week or so afterwards, my brother and I, accompanied by Mr. Rand, visited the haunts of the Grouse for the purpose of taking photographs of the bird in her native habitat. Mr. Rand said at this time that he had not seen the bird since he had taken her to the village; so we were anxious to learn how such familiar treatment had affected her. Mr. Rand called "Chickee," "Chickee," but no answering "Quit," "Quit," came from the woods, as heretofore at his call. Then we made a systematic search of the woods, each one calling, "Chickee," "Chickee," but of no avail. We searched again and continued to search and call for over an hour, but no Grouse made her appearance. Surely, the bird must have resented the familiar treatment in her journey to the village and have gone to join the

wild members of her species. Disappointed, we were about to give up the search, when suddenly the familiar "Quit" was heard. The bird was seen coming slowly toward us. We tried in vain to coax the Grouse into the open field, but she was more shy than usual and kept at a distance. Finally, after much coaxing, the bird came within a few feet of us, but she would not allow herself to be handled. Exposures were made, but they were unsuccessful on account of the extreme shyness of the bird and because of the underbrush. Once she came within ten feet of me, stood gazing intently at me a few moments and then walked slowly away. Surely the Grouse did resent being taken to town and a too close acquaintanceship with strangers. The bird has learned something from experience, and does not wish to be treated in that way a second time.

A number of weeks afterwards, my brother and Mr. Rand again visited the haunts of the Grouse, going through the same process as described above, calling "Chickee," "Chickee," and searching the thicket. In about fifteen minutes they discovered that the Grouse was following them, her presence being detected by a responsive cluck from the bird and by the sound of her walking in the leaves. At first she was rather wary, not allowing them to get nearer than a rod. As they advanced the Grouse would retreat, and, upon their retreating, she would come up to the original point. Mr. Rand took a stick and rustled in the leaves. This attracted her curiosity and as he retreated she advanced. They got her within ten feet of the edge of the thicket, and several exposures were made of the bird at that place. It was very hard to get her out into the open. They stripped choke-cherries from the overhanging bushes and fed them to her. These she ate readily. Finally, after a half hour's coaxing, she came out into the open space, where my brother took several snap-shots of her; each one being nearer than the preceding, she all the time becoming more familiar in her attitude toward them. After my brother had exposed the last plate, the Grouse came up to the camera and pecked the tripod and camera case lying near. At this point a Hawk flew past overhead and the bird darted back into the thicket. After twenty minutes of coaxing they got her out again to the edge of the brush, but she would come no farther. Finally, Mr. Rand picked her up and brought her out. She resented being handled, but still did not run away when he put her on the ground. At this point a third man came on the scene, but the Grouse appeared to take no notice of him. Mr. Rand held out his hand and the bird backed slowly away, still facing him. She was backing up a steep incline and so could not move very fast. He thrust his hand under her feet and she stepped into it. Here was a Ruffed Grouse, said to be untamable, standing in a man's hand, and all of my brother's plates were exposed !

A week after this another visit was made to the Grouse. This time

the bird was found without much difficulty. She was shy at first, but after some coaxing she became on intimate terms with the men. The camera was focused on a stone in an opening, and Mr. Rand coaxed the bird upon it, when the bulb was pressed. The bird was much more tractable than on previous days, as she came close to the men. The Grouse kept close watch of the movements of Mr. Rand's hands, following them with her head. Thus he could get her into almost any position he wished. Exposures were made of front, side, and back views. Repeating the process described



A TAME RUFFED GROUSE
Note the open mouth and drooped wings; see text

above, Mr. Rand got her to stand on his hand again. In this position snapshots were taken of the bird. Although exposed $\frac{1}{50}$ of a second with the full stop, the movement of her wings in keeping her balance resulted in only a confused blur on the negative.

The pictures were taken on a hot day in August and the unusual exercise and excitement fatigued the Grouse. She lolled like a thirsty hen in the barnyard, and some of the photographs represent her in this condition.

This Grouse is a female, but she evidently did not rear a brood last spring, as Mr. Rand says he saw her oftenest during the breeding season and there were no evidences of the bird having a nest or young.

The woods which the Grouse frequents are composed of a marginal growth of willow, alder, ash and maple, not more than ten rods wide, along a small stream. On the other side is a cultivated field. Less than

one hundred rods away is an extensive forest where the bird could range for miles, yet she apparently chooses to limit her range to a few acres. A much-traveled highway passes within ten rods; indeed, the woods border the highway for some distance. The bird is frequently seen by travelers. In fact, on one occasion, she was picked up by two ladies passing in a carriage and was taken to a neighboring farmhouse. This confidence in human beings may some day lead to her death. To guard against this, however, Mr. Rand has conspicuously posted her haunts, and his wishes were respected by the sportsmen, for she lived through the open hunting season, being last seen on December 10.

Now, the question naturally arises, why is this bird so tame? She appears to be a normal, well-developed bird, bright and active in every way. Aside from her tameness, there is nothing in her appearance or actions that differs, so far as we could observe, from other individuals of her species. Why, then, did this particular Grouse forsake her fellows and the hereditary tendencies of countless generations of wild birds, to place herself on such intimate terms with man?

RUFFED GROUSE POSES

A GULL ISLAND

The Herring Gull on Lake Superior

By BAYARD H. CHRISTY and NORMAN McCLINTOCK

With photographs from nature by the authors

THE Herring Gull is the common Gull of our northern coasts, lakes and rivers. South of Maine, northern New York and the Great Lake region, the Herring Gull is usually seen in winter only. Therefore it is characterized in some southern localities as Winter Gull, in contradistinction to the Summer or Laughing Gull.

A large colony of Herring Gulls now breeds undisturbed upon an inaccessible small group of about half a dozen granitic islands, extending east and west, and lying some two or three miles off the south shore of Lake Superior. The larger islands of the group rise two hundred to three hundred feet above the lake and are wooded. The smaller islands, which are the most easterly, are mere low crags that are broken and seamed. All the islands are heavily glaciated.

Upon July 22, 1903, we visited one of these smaller islands, which is about one hundred yards long, less than half as wide and scarcely twenty feet high. The vegetation is limited to lichens, grasses and small plants, which find but scant rooting in the crannies. Here the accompanying photographs were taken, excepting that of the flying Gulls, which was obtained on the St. Mary's river.

From a distance, the island was seen to be dotted white with several hundred of these beautiful Gulls, which rose as we approached and, screaming constantly, kept circling overhead, while we remained.

Upon our landing, a number of young Gulls, unable to fly, went scrambling and tumbling down the rocks, and swam several hundred yards out into the lake, to where a number of the old birds had settled down. Occasionally, one of the parent birds, whose young we disturbed, would swoop down close to our heads.

We found a dozen or twenty nests, which were placed wherever a broad level surface afforded a site upon the higher portions of the rocks.

These nests were composed of dried grass and pine needles and a few

old feathers. Each contained about a peck of material, formed into a low heap, with a shallow bowl-shaped bed in the top, six or eight inches across.

The nesting season was past, but we found some half dozen addled eggs. Judging from these, there were two types, which we would characterize as a gray-green and a gray-brown. They approximated in size and form an ordinary hen's egg.

As we climbed up the rocks, the young Gulls that did not swim away sought refuge by hiding; and so closely did they blend with the color and

HERRING GULL'S NEST AND TWO YOUNG GULLS

tone of the rocks that they were scarcely discernable, even at a distance of but a few feet.

With heads down and bills invariably thrust into the farthest corners, they crouched in the crannies. The appearance of these little Gulls, thus huddled down, strongly suggested kittens.

They were covered with a soft, fur-like down, in color grayish white, indistinctly mottled with black. The markings on the head are much more sharply defined than on the body. The eye is black and the expression alert. The feet, like a puppy's, are much too large for the body, and the whole effect is comical. We found these small Gulls usually in pairs, and judged therefrom that each family kept to itself.

A curious instinct of self-defence—to disgust its enemies—was invari-

ably resorted to, by each young Gull that we picked up and set upon its feet. The bird first voided a large quantity of ill-smelling offal; then, after some gaping and wrenching of the neck, disgorged a cropful of half-digested fish, after which it would scramble away to find another hiding-place.

Amongst the old birds flying about, very few dark-colored young were seen.

The day of our visit was cloudless and still; the heat was intense; and this, with the stench of addled eggs, decaying fish and excrement dropped by the young and by the old birds circling overhead, together with the swarm of minute flies present everywhere, made the place as unpleasant as it was interesting.

As we passed other islands of the group, we saw a number of young Gulls swimming in the shelter of the rocks and attended by the parent birds. These were doubtless the more mature young, which had taken to the water upon our approach.

HERRING GULLS

A Blue Jay Household

By ISABELLA McC. LEMMON

DURING the spring of 1903, an unusually favorable opportunity was afforded me for observing the nesting of a pair of Blue Jays. The birds often come about our lawn at Englewood, N. J., especially during the leafless months, attracted from the near-by woods by the many evergreens, and it was not a great surprise when, early in April, a pair was seen near the house evidently nest-hunting. But, to my astonishment, the tree chosen was a spruce that stands so close to the house that some of its branches brush against the building.

On April 10, the foundation of the nest was discovered near the end of one of the lowest branches of this tree, within easy reach from the ground and about ten feet from a small porch. At this time it consisted of a handful of twigs and numberless pieces of string, but later softer materials were brought, and the lining was of fine rootlets.

Most of the work was done early in the morning, for after human life became fully awake the birds were too wary to visit their tree very freely; but some interesting incidents were observed from the house, and once or twice something very like reasoning was exhibited: on one occasion the bird alighted on a long, low branch of another spruce and walked out toward a piece of string which was caught among the end twigs. The branch sank lower and lower under the added weight until it rested on the ground; at this point the Jay seemed to think better work could be done from the more solid basis, and hopped off. Naturally the branch rose at once, leaving the bird to regard it with an expression of utter astonishment; then it flew up once more, again walked out to the end, and from *there* untangled the string.

The nest was a long time in building, and the first egg was laid on April 29, another appearing each day until May 3, making five in all, but sitting evidently began on May 2. By this time the bird had grown so much less timid that we could use the near-by steps with perfect freedom—once I walked under the tree, almost under the nest itself, without frightening her away.

On May 19, four of the young Jays were out, and the remaining egg hatched the next day. Of course they grew with great rapidity, and by the 27th their eyes were partly open; on June 2 I first saw them trimming their feathers, which by this time showed decided color,—grayish on the back of the head, blue and white on the wings, etc. On the evening of that date I also found that they were no longer brooded at night; they more than filled the nest now, and regarded passers-by with evident suspicion.

On June 3, I kept a record of the number of times food was brought

the young birds during the afternoon, and, wishing to see how it was carried, took up my position on the steps near the nest. In a short time one of the parents alighted in the tree, but discovered me in an instant and gave two low calls, the familiar '*tu-reé!*' of doubt and caution, and another of three notes with the accent on the first. At the sound the young birds at once set up their chatter, but the parent left the tree and not until the fourth attempt did she venture to feed them. But I had seen how the food was carried: in the mouth, apparently under the tongue, for the throat just below the bill bulged out almost like a pouch, though it did not seem to interfere with her voice. This was at 12.40 o'clock, and I then returned to the house to watch through the shutter of a convenient window. It was 1.45 when the chattering of the young announced the return of the old bird, and after she had disposed of her mouthful of food she crossed over to the branches near the steps and carefully assured herself that the intruder was no longer there. I use the feminine, believing that the female did the greater part, if not all of the feeding, for, though I never could detect any difference in the coloring of the two birds, one seemed less timid, and only once did I see the two approaching the nest together; if the male had been assisting he surely would have chanced there occasionally at about the same time as his mate.

During the rest of that afternoon the feeding times were as follows: 2.02, 2.30, 2.55, 3.25, 4, 4.12, 4.22 (I wondered if the nest of some unwilling Thrush or Robin had not furnished the last three mouthfuls), 5.10, 6, 7.20. Probably I missed one feeding between 6 and 7.20, having been away from the window at that time.

Three days later the young all left the nest, but remained in the neighborhood for several days, their voices becoming daily more like the parents', and on June 12 we saw them for the last time.

For Teachers and Students

The Migration of Warblers

FOURTH PAPER

Compiled by Professor W. W. Cook, Chiefly from Data in the Biological Survey

With drawings by Louis Agassiz Fuertes and Bruce Horsfall

BLUE-WINGED WARBLER

The earliest arrivals of this species noted in the United States are at New Orleans, La., March 22, 1898, and on the Tortugas, Fla., March 23, 1890.

SPRING MIGRATION

PLACE	No. of years' record	Average date of spring arrival	Earliest date of spring arrival
Atlantic Coast—			
Shelby, Ala.			April 4, 1898
Washington, D. C.			April 26, 1891
New Providence, N. J.	7	May 7	May 3, 1891
Englewood, N. J.	8	May 4	May 2, 1902
Beaver, Pa.	3	May 3	May 2, 1891
Berwyn, Pa.	7	May 7	May 3, 1900
Southeastern New York	5	May 4	May 2, 1900
Portland, Conn.	13	May 12	May 2, 1902
Framingham, Mass.			May 13, 1896
Mississippi Valley—			
Eubank, Ky.	8	April 14	April 10, 1893
St. Louis, Mo.	7	April 22	April 17, 1883
Brookville, Ind.	6	April 26	April 17, 1896
Rockford, Ill.	5	May 6	May 2, 1890
Petersburg, Mich.			May 10, 1897
Grinnell, Ia.	4	May 4	April 28, 1888
Lanesboro, Minn.	6	May 14	May 7, 1895

FALL MIGRATION

The last one noted at Lanesboro, Minn., was on September 1, 1889, but the southern part of the breeding-ground is not deserted until early in October.

GOLDEN-WINGED WARBLER

SPRING MIGRATION

PLACE	No. of years' record	Average date of spring arrival	Earliest date of spring arrival
Atlantic Coast—			
Rising Fawn, Ga.			April 11, 1885
Asheville, N. C.			April 22, 1893
French Creek, W. Va.	4	May 2	April 30, 1893
Washington, D. C.	3	May 3	May 2, 1890
Beaver, Pa.	3	April 30	April 24, 1902
Waynesburg, Pa.	3	April 30	April 26, 1896
Portland, Conn.	18	May 12	May 3, 1896
West Roxbury, Mass.	5	May 9	May 4, 1891
Framingham, Mass.	10	May 10	May 8, 1895
Mississippi Valley—			
St. Louis, Mo.	6	May 1	April 26, 1888
Keokuk, Ia.	4	April 30	April 22, 1894
Waterloo, Ind.	6	April 30	April 27, 1896
Petersburg, Mich.	10	May 4	April 25, 1886
Livonia, Mich.	5	May 7	May 5, 1897
Southern Ontario	8	May 6	May 2, 1900
Lanesboro, Minn.			May 8, 1887
Elk River, Minn.			May 12, 1888

FALL MIGRATION

A fall migrant has been seen at New Orleans, La., as early as July 23, 1898, and one was taken on the northern coast of South America, September 6, showing that the Golden-winged Warbler is among the early migrants. The last ones seen were noted at Lanesboro, Minn., September 8, 1889; Livonia, Mich., September 21, 1891; Chicago, Ill., September 25, 1895; Englewood, N. J., September 2, 1886; French Creek, W. Va., September 15, 1892; Chester county, S. C., September 22, 1887, and New Orleans, La., September 21, 1897.

For Young Observers

Tree Swallows in a Bird-box

By RICHARD M. HUNT, Winchester, Mass.

Illustrated by the author

EARLY in the spring of 1902, before any migrants had ventured north, I placed a bird-box in a maple tree not far from my window, hoping to get a pair of Bluebirds to stay, a little later on. A pair of Bluebirds came, indeed, but they paid no attention to the snug home in the maple tree—until it was too late; for, about the first of May, a pair of Tree Swallows were seen circling about the box, and plainly announcing their intention to take possession, by giving continual utterance to their joyful, gurgling twitters. Just now, however, the Bluebirds began to dispute the Swallows' right to the box, to their sorrow, for the Swallows trounced them soundly.

Now the Swallows began to build, but soon began to encounter difficulties in the shape of English Sparrows. These little scoundrels would seize the opportunity, when the Swallows were away, to pull the carefully made nest from the box and scatter it in all directions. One day a Sparrow was caught in the act. He had just entered the Swallows' house, when he was seen by one of the real owners. The Swallow went inside also, and I could hear a loud squawking there. Finally the Swallow appeared, tail first, dragging the Sparrow by the nape of the neck. When outside, the Swallow shook that Sparrow as a dog shakes a rat, and dropped him at the foot of the tree! The defeated tramp limped away, and, I have good reason to believe, never troubled the Swallows again. In fact, the Swallows were never troubled seriously again by any bird. They were the true owners of their home, and deserved to be.

Now the Tree Swallows settled down seriously, raised their brood, and departed before July.

. . . . . .

Early on the morning of March 27, 1903, I was returning from my usual before-breakfast bird-walk. As I approached my house, I thought I heard a familiar sound—a joyful, gurgling twitter. I glanced at the long-deserted bird-box, and there were apparently my Tree Swallows. They had safely sustained the long migration, and here they were, the undisputed masters of the box.

For about three weeks after their arrival they could be seen perching near the box, or flying about it, although, for some reason, they would never enter it.

On April 17, they were seen to enter their box several times, and also

to investigate two other boxes which I had placed near by. May 21, another pair of Swallows took one of the new boxes.

From April 17 to May 7, the Swallows were near their box all the time, but were never seen to enter.

On May 8, came the first signs of building. Straw and feathers were the chief materials used for building. To procure these materials the Swallows lit upon the ground, where they were exceedingly clumsy, resting upon their long wings.

On May 21, the Swallows had become more quiet, which led me to believe that eggs were in the nest. To verify my belief I tapped the tree, and out flew a Swallow. Now I knew that there were eggs.

TREE SWALLOWS AT HOME

Then, for several days, more than one of the Swallows was rarely seen. On June 3, however, the birds were flying merrily about, and I could hear the young squealing in the box. The old birds were now kept busy getting food for their hungry young.

On the morning of June 16, six young Swallows were seen in the doorway of the box, taking their first peep at the outside world. They now had to be fed much oftener. Here is a record of the number of times the young were fed, for about thirty minutes, which serves as a fair example of the number of times they were fed all day long: Fed once at 3.25, 3.37, 3.39 and 3.40; twice at 3.44 and once at 3.59. It then began to rain, and the Swallows went inside until it stopped, when they resumed as before. On this same day, a little later, two of the young fell out of the box, and I replaced them.

On June 17, I began to take some photographs of the box. While do-

ing this, I discovered one of the young perched upon a twig on the ground. I focused the camera upon him and snapped it. All the while, the two parents and two other pairs of Swallows, who came from I don't know where, were swooping just above the youngster's head. Finally, without any warning, the young one spread his wings and was instantly borne upward in a screaming, flapping mass of old birds, who prevented his falling. Over the pond they went, now back over the box again, and finally down the street; the youngster flew better as he flew farther, and before he was through he was able to flap along nearly as well as his father. Thus did the first of the Swallow brood learn to fly.

It rained all that night, and June 18 dawned cold and wet. As I looked out of the window I saw a soft gray thing under the box. Upon investigating I found it to be a young Swallow, cold and stiff. Poor little chap; he had fallen from his nest at dawn, and died of the damp and wet. I picked him up. He was a pretty little fellow,—soft gray, with a collar of the same, and a white throat and belly.

My photographs were not successful, but I kept taking new ones each day, a few of which were fairly good. As I had never tried bird-photography before, I made many sad mistakes.

My Swallows, however, were very tame and seemed to put the utmost confidence in me, even when I placed the camera on prolonged tripods, at a distance of four feet from the box. The birds would feed their young within a yard of my face without hesitating. Twice, when the Swallows were especially irritable or anxious concerning their young, they would swoop at my head so close that it made me duck. As they whizzed by me they would give an angry '*click*,' half vocal, and half made by snapping the bill.

The other notes of the Swallows are a rasping, harsh, alarm note, sounding like, '*skee-kee-kee-skee-kee-kee*,' etc.; the joyful twitter already mentioned, and a low, contented gurgle, always given when the bird is perching. Sometimes, as a parent bird swoops through the door of the house, it utters an indescribable note, sounding more like '*schleik*' than anything else.

The young would now sit in the doorway all day long, waiting to be fed. As one of the parents approached them, instantly the soft gray mass in the doorway would change into flaming orange as each wide mouth was opened. The parent bird would thrust a mass of flies down one of the eager throats, and then rise into the air again until another mouthful of flies was caught. It was comical to watch the contortions of the young one trying to swallow the huge mouthful, but he always did it, and opened up again as wide as any of his brothers.

On June 19, I noticed that the daring young one who had learned to fly a few days before was back in the box again.

For some days now my Swallows had been having visitors to their box. These Swallows would often come to the maple tree, perhaps to make a call. One especially I could always distinguish, for she was a dull brown color, and not at all green and shiny. She would come quite often, and, clinging onto the door of the box, would gaze curiously at the young ones, who evidently knew she was not their father or mother, for they never opened their mouths to her for food. Once a strange Swallow came and fed the young ones.

On June 20, all five of the young were still at the door of the box. This was the last day I saw my Swallows. The two old ones were perched upon the maple, with the morning sun shining upon their beautiful greenish blue backs and snowy white breasts. The next day I went away.

I returned on July 3 and the box was vacant.

SPOTTED SANDPIPER

Photographed from nature by R. H. Beebe, Arcade, N. Y.

Notes from Field and Study

A Morning's Bird-List

As is well known, the spring of 1900 was an extraordinary bird-season in southern New England and the Middle States. Many usually rare species among the northward migrants became decidedly common; while, in addition to this, there was a remarkable dallying of northern winter visitants far south of their normal limits. The result, particularly within the northern border of the Carolinian zone, was a most extraordinary conglomeration of birds, the like of which will probably not be seen again for many years.

Mr. Louis A. Fuertes and I had the good fortune to spend most of that spring together, in a particularly favorable locality, at Scarboro, on the east shore of the Hudson river, thirty miles above New York. This place, which is part of the ground made historic for ornithologists by the researches of Dr. Fisher, had the peculiar advantage of being within the overlap of the newly settled Carolinian and the loitering boreal birds, and at the same time full in the track of the great northward migration of Canadian species. A better position for studying the incongruities of the season could hardly have been chosen. In the rich, luxuriant spring of that warm, alluvial land, where already in mid-May the landscape wore the garb of summer, and the southern birds, such as Kentucky, Hooded, Blue-winged, Prairie and Worm-eating Warblers, Yellow-breasted Chats, Louisiana Water-Thrushes, Orchard Orioles, Acadian Flycatchers, etc., were settled on their breeding-grounds, it was indeed strange to hear the soft, chattering call and clear '*bleat*' of White-winged Crossbills, which still climbed about our Norway spruces, in twos and threes. Two at least and I think three of these birds were still in the region when I left on May 29. Furthermore, they were to all intents and purposes *settled* in the Norway spruces about my home, rarely straying from them, and had been in this chronic state for weeks, so that they doubtless lingered on well into June at least. There is no reason to believe, however, the birds were nesting. Red Crossbills and Siskins were also present throughout May, and Redpoll Linnets were seen on April 29.

Altogether we found over a hundred and forty species within two or three miles of our house, in the course of two months. Thirty-two of these were Warblers,—all the Warblers normally possible to the region, with the exception of the Orange-crowned, Connecticut, Cerulean, Brewster's and Kirtland's,—birds so unlikely to occur there at that season as to be hardly worth considering in this connection. Thirty of these Warblers were found on the small homestead described below.

The appended list of eighty species seen on a single forenoon gives an idea of the wonderful diversity and richness of the temporary avifauna. With very few exceptions, these birds were all found on a single hillside homestead of about six acres, containing grass-land, bushes and brambles, as well as many fruit and evergreen trees. Our only excursion beyond these limits was a walk across lots to the river, a distance of half a mile, and only two or three species (among them the Rough-winged Swallow) were added by this trip. Fuertes and I were almost constantly together, so that we had scarcely any advantages over a single observer. Considering the limitations of time and area, this list seems to be a very large one. Extending our field half a mile to the eastward would have added at least four species, among them the Kentucky and Worm-eating Warblers. Notice that the list consists almost wholly of the smaller passerine birds, and does not include even a single Hawk.

May 12, 1900. Bob-white, Mourning Dove, Yellow-billed Cuckoo, Black-billed Cuckoo, Downy Woodpecker, Flicker,

Nighthawk, Chimney Swift, Ruby-throated Hummingbird, Kingbird, Crested Flycatcher, Phœbe, Least Flycatcher, Blue Jay, American Crow, Fish Crow, Bobolink, Cowbird, Red-winged Blackbird, Meadowlark, Orchard Oriole, Baltimore Oriole, Purple Grackle, Purple Finch, American Crossbill, White-winged Crossbill, American Goldfinch, Pine Siskin, Vesper Sparrow, Yellow-winged Sparrow, Chipping Sparrow, Field Sparrow, Song Sparrow, Lincoln's Sparrow, Towhee, Rose-breasted Grosbeak, Indigo-bird, Scarlet Tanager, Cliff Swallow, Barn Swallow, Rough-winged Swallow, Cedar-bird, Red-eyed Vireo, Warbling Vireo, Yellow-throated Vireo, White-eyed Vireo, Black and White Warbler, Blue-winged Warbler, Golden-winged Warbler, Nashville Warbler, Parula Warbler, Cape May Warbler, Yellow Warbler, Black-throated Blue Warbler, Yellow-rumped Warbler, Black and Yellow Warbler, Chestnut-sided Warbler, Bay-breasted Warbler, Blackburnian Warbler, Black-throated Green Warbler, Prairie Warbler, Ovenbird, Northern Water-Thrush, Louisiana Water-Thrush, Maryland Yellow-throat Warbler, Yellow-breasted Chat, Wilson's Warbler, Canadian Warbler, American Redstart, Catbird, Brown Thrasher, House Wren, White-breasted Nuthatch, Chickadee, Wood Thrush, Wilson's Thrush, Gray-cheeked Thrush, Olive-backed Thrush, American Robin, Bluebird.—GERALD H. THAYER, *Monadnock, N. H.*

Notes from in and near New York

HAIRY WOODPECKER. A male and a female spent this past winter in the Ramble, Central Park, and they or others have been seen in the north end woods. This is the first time in the four years I have been in New York that I have known this species to winter here.

PINE GROSBEAK. I was shown two, in gray plumage, in Central Park, November 12, 1903, and had excellent views before they flew. About three minutes later I found three (different ?) individuals in the same place, also gray. At Nordhoff, Bergen County, N. J., on January 9, I saw three Grosbeaks, two of them splendid adult males.

PINE SISKIN. October 11, 1903, I saw one Siskin feeding with several other species of its family, in Central Park, on the wall of the smaller reservoir.

FIELD SPARROW. In Bronx Park, at Pelham avenue, where it crosses the Bronx river, I saw one individual on January 17, feeding with Tree and Song Sparrows.

HOODED WARBLER. November 8, 1903, six weeks later than the date for departure given in Mr. Chapman's 'Handbook,' I saw an adult male at Grantwood, Bergen county, N. J.

WILSON'S WARBLER. I saw one in Central Park, on October 31, 1903. My dates for this and the next species were each a month later than those given in the 'Handbook.'

LONG-BILLED MARSH WREN. I saw one of these Wrens at Moresmere, Bergen county, N. J., on November 8, 1903, and another on the 21st.—CHARLES H. ROGERS, *New York City.*

Pine Grosbeaks in New Jersey

Pine Grosbeaks were first seen here on Christmas Day, their first appearance since February, 1897; I next saw them the first Sunday of the new year, and since then have seen literally hundreds of them. It has been no unusual thing to see as many as four or five flocks of from six to twenty individuals in the course of an afternoon's walk. They have been seen in every part of town, and many people have been sure that a large flock of Robins was wintering in their cedars. Since the middle of February I have not seen so many, generally a single one, or sometimes two. The proportion of red to gray ones has been one to five or six.

For several weeks after their arrival their food seemed to consist of the fruit of the mountain ash and honeysuckle berries, and while the berries lasted they were daily visitors to porches where honeysuckles are found. Lately they have been feeding on tree-buds, especially those of the English

maple and the larch; of the latter they ate not only the buds, but even the bark of the smaller, more tender branches.

I saw an occasional one as late as March 21, and hope that observers have made careful notes of their latest appearance.

During this exceptionally severe winter, I have seen, in addition to the very common winter birds, Tufted Titmice, Kingfishers, Bluebirds and Winter Wrens. Brown Creepers have been unusually abundant, as were Red-breasted Nuthatches during late fall and early winter. Redpolls and Snowflakes have been reported, but I have not been so fortunate as to see them. On the other hand, some of our regular winter birds, Song Sparrows, Golden-crowned Kinglets and Flickers, seemed entirely to disappear for a time.—R. C. CASKEY, *Morristown, N. J.*

Purple Martins in Illinois

In the fall number of BIRD-LORE I saw an account of great destruction to Purple Martins last summer, all through the East, and one especially in which all the young of a large colony were destroyed by rains.

It may be interesting to your readers to know that I observed fourteen pairs which, as far as I knew, raised all their young successfully this summer (1903). When they gathered for migration the sky about the Martin house was dark with birds.—ABBIE VREDENBURGH, *Curran, Ill.*

Cowbird and White-eyed Vireo

Having heard some conjectures and inquiries of the treatment of the young in nests when shared by the young Cowbirds, the following observations may prove of interest. A pair of White-eyed Vireos had a nest in an apple tree in my orchard, about eight feet from the ground. I found that it contained a young Cowbird and one young Vireo. The Cowbird, of course, was much the larger. When the Cowbird was half-grown it left the nest by being disturbed. For the first three days after the Cowbird left the nest, the old birds fed both the Cowbird and Vireo in the nest, but on the fourth the little Vireo died, apparently from neglect. By this time the Cowbird was able to fly and meet the foster-parents, which it did so persistently before they could get near the nest, that it seemed to take all the food the old birds could procure, and they apparently could not satisfy the Cowbird and nestling too. The Cowbird was by this time bigger than its foster-parents.—HENRY HALES, *Ridgewood, N. J.*

Bird Protection in Great Britain

The British Admiralty have lately taken a step in regard to bird protection which we might well emulate in this country. It is reported in English 'Country Life' as follows:

"Amongst the things that we pretend to do, and leave most carefully undone, must be numbered the protection of wild birds. There are Acts enough in the Statute Book, it is true, and they can be produced at any time for purposes of annoyance, but they are entirely ineffective as a means for the preservation of our wild birds, and especially of sea-birds. It is a notorious fact that any one who wishes it, and is willing to pay the price, may have Gulls' eggs for his breakfast during the whole of the breeding season, or, if he be on collecting bent, he may, for a price varying with the rarity of the bird, obtain clutches of all our disappearing species. Under these circumstances, it is a matter for congratulation that the Admiralty has sanctioned the coöperation of the coastguard in carrying out the provisions of the Wild Birds' Protection Act. There are 677 coastguard stations on the coast, and the mere knowledge that each coastguardsman has power to interfere with the destruction of wild birds or their nests, ought to act as a check upon the depredations that are constantly taking place."

'By the Wayside'

With the May issue of this progressive little magazine, Miss Ruth Marshall, of the Ryan High School, Appleton, Wis., assumes the editorship. An especial effort will be made to increase the magazine's value to nature-study teachers.

Book News and Reviews

A Guide to the Birds of New England and Eastern New York, containing a key for each season and short descriptions of over two hundred and fifty species, with particular reference to their appearance in the field. By Ralph Hoffmann, member of the American Ornithologists' Union. With four full-page plates by Louis Agassiz Fuertes, and nearly one hundred cuts in the text. Boston and New York: Houghton, Mifflin & Co. The Riverside Press, Cambridge. 1904. 12mo. xiii + 357 pages.

So many books designed to aid beginners in identifying the birds of the northeastern United States have appeared in the last fifteen years that, before opening this new 'Guide,' one might well be pardoned for believing it superfluous. A glance through its pages, however, will be enough to convince one that this is not the case.

This work treats of practically all the species of New England birds exclusive of accidental visitants and very rare, irregular stragglers. Short introductory chapters are given on 'Birds and their Seasons,' 'Migration,' 'Distribution' (accompanied by a map of the region covered, showing the life zones), 'Hints for Field Work' and 'How to Use the Keys.' In the latter the number of possibilities is narrowed by giving separate keys for winter, summer and autumn, and one for each of the spring months.

In the body of the book we find family headings, under which are summarized the distribution and abundance of the species and the prominent family characteristics. The order now usually followed is reversed, this book beginning with the Thrushes and ending with the Grebes.

An average of about a page is devoted to each species. Following the description of the bird's plumage, the nest and eggs are briefly described. The first large type paragraph gives the status of the species in the region covered,—its abundance, distribution, time of occurrence and haunts. The notes, habits and appearance of the bird in the field are then described, with the one object of identification in view. Mention is made of all species which might be mistaken by the beginner for the one under consideration, and the differences between them are fully discussed. This is the part of the work which will be of greatest assistance to the student. Frequent cross-references facilitate efforts at identification.

The book is illustrated by four full-page plates by Fuertes and numerous cuts in the text, most of them showing the head or head and forepart of body. An appendix gives 'Lists of birds breeding in the three life zones of New England and eastern New York,' and a list of books of reference.

It is our opinion that for beginners in the restricted region covered by this book it will prove to be the most helpful of any manual yet published for the identification of birds in the field.—W. De W. M.

Baby Pathfinder to the Birds: A Pocket Guide to One Hundred and Ten Land Birds of New England, with Blank Pages for Notes. By Harriet E. Richards and Emma G. Cummings, members of American Ornithologists' Union. Illustrated. W. A. Butterfield, Publisher, 59 Bromfield St., Boston, Mass. 1904. 125 leaves. 2¼ x 4⅛ inches.

The object and scope of this tiny booklet are described in the following extract from the preface: "This little guide has been prepared primarily for New England, but should be of service in New York, New Jersey and Pennsylvania. Birds of prey, game- and water-birds are not included. The descriptions are based on the general appearance of adult birds as seen in the field. The small size and blank pages for notes commend the book for use out-of-doors, to be supplemented at home with reference to more elaborate works."

One hundred and ten of the commoner New England land-birds, from the Cuckoos to the Thrushes, are described. Each species occupies a page, the reverse side of the leaf being left blank for field notes. The larger families are preceded by a few remarks on the family characteristics.

Description of plumage is followed by

brief notes on haunts, habits, food, abundance and time of arrival. The last two have reference to the species in Massachusetts. Notes, nest and breeding range in New England are treated in a few words under separate headings. About one-fourth of the species are represented by small outline illustrations.—W. DeW. M.

The Ornithological Magazines

THE AUK.—A timely criticism of 'nature-books' attracts our attention in the April 'Auk.' W. M. Wheeler, writing on 'The Obligations of the Student of Animal Behavior,' says, that "all we can really perceive of animal behavior is certain movements of the creatures in time and space. As soon as we attempt to assign causes to these movements we at once pass into the province of pure inference." Here is food for reflection which may not be altogether palatable for some who have wielded the pen of late years in combining science and fiction. H. Oldys, writing on 'The Rhythmical Song of the Wood Pewee,' considers it as taking "higher technical rank than any other known example of bird music." His reduction of it to musical notation is, however, like all attempts of this kind, eminently unsatisfactory for any one who has ever heard the bird.

A. C. Bent continues his article on the 'Nesting Habits of the Herodiones in Florida,' showing admirable photographs that evidently represent much expenditure of energy in the taking. On the whole, the Herons protected from the plume-hunters would not seem to be in immediate danger of extermination. Not so, the Masked Bob-white of Arizona, which, according to H. Brown, survives only in Mexico, although not persecuted for feathers. The title 'Curve-billed and Palmer's Thrashers,' by J. H. Clark, is misleading, for the paper deals only with the nests and eggs of these two birds. It is illustrated.

The perennial local list is much in evidence, one by R. E. Snodgrass, on birds of the state of Washington, one by G. Eifrig, on those of western Maryland, and one by G. F. Breninger, on those of San Clemente Island, California. The status of the western form of Lincoln's Sparrow is discussed by J. Grinnell; there are valuable reviews—one on that classic of North American ornithology, Coues' 'Key to North American Birds'—and the general notes are numerous.—J. D., JR.

THE CONDOR.—The opening article in the March-April number of 'The Condor' contains an interesting description of the habits of 'Two Oregon Warblers,' by W. L. Finley, and is illustrated by reproductions of five striking photographs by Bohlman, showing the Black-throated Gray Warbler and the Western Yellow Throat feeding their young. A brief account of the 'Nesting Habits of the Black-headed Grosbeak' is contributed by Anna Head, and a description of 'A Sandhill Crane's Nest' in Gunnison county, Colorado, by E. R. Warren.

Under the title 'Destruction of Birds by Wires,' Emerson describes the havoc wrought among the smaller shore birds by two telephone wires strung across the marsh near Haywards, Cal., at a height just sufficient to catch the flocks of Sandpipers and Phalaropes passing from the feeding-grounds in one pond to another. Forty dead birds were picked up in one day and thirty the next.

Notes on 49 species of 'Midwinter Birds at Palm Springs, California,' are given by Grinnell, who calls attention to this locality as probably one of the best in the state for observing the migration of land-birds. The status of 'The Elf Owl in California' is firmly established by Herbert Brown, who describes the finding of two nests with eggs at Duncan Flats, about 25 miles north of Yuma, in May, 1903. This interesting species, first described from a specimen collected at Fort Mohave, Ariz., in 1861, seems to be limited in its distribution in Arizona and California by the range of the giant cactus, which is found on the west side of the Colorado river at only a few points. The first part of a paper entitled 'Nevada Notes,' based on observations made along the Humboldt river in the summer of 1903, is contributed by W. C.

Hanna. In one of the brief notes 'From Field and Study,' Dille records two sets of eggs of the Flammulated Screech Owl and one of the Evening Grosbeak, found in Estes Park, Colo., in June, 1903, a description of which is promised for a future number.

The series of portraits of eastern ornithologists begun last year is continued in this number by a portrait and brief summary of the work of E. W. Nelson, 'our authority on Mexican birds.'—T. S. P.

Bulletin of the Michigan Ornithological Club.—The March number comes to us much improved in typography, with a new cover and increased number of pages. It is almost entirely devoted to two articles on Kirtland's Warbler, which contain probably more information relative to this rare bird than all previous literature combined. Norman A. Wood writes on the 'Discovery of the Breeding Area of Kirtland's Warbler,' with a list of the specimens of this bird secured or observed in Michigan. Chas. C. Adams follows with an article on 'The Migration Route of Kirtland's Warbler,' which contains much of interest. A number of local field notes testify to the activity of the Club.—W. S.

Journal of the Maine Ornithological Society.—The April number contains a long article on 'Man's Relation to the Lower Animals' by Prof. J. Y. Stanton. 'Contributions to the Life History of the Yellow Palm Warbler,' by O. W. Knight, is the first of a promised series of papers on the Warblers of Maine, to be prepared by various members of the Society. A. H. Norton continues his 'Notes on the Finches of Maine.' A. C. Dike treats of 'Attracting Birds in Winter,' and G. D. Libby writes on the 'Woodcock.' Numerous local notes make up an excellent number.—W. S.

Wilson Bulletin.—No. 46 of the 'Wilson Bulletin,' which has appeared since our last review, contains the following articles and short notes: 'The Cerulean Warbler,' Lynds Jones; 'Partial List of Summer Birds of Holderness, N. H.,' A. C. Comey; 'The Larks of Germany,' W. F. Henninger; 'The Marsh Wren's Midnight Song,' C. J. Hunt; 'A Double Nest of Red-eyed Vireo,' Lynds Jones; 'The Clock Factory,' Ester Craigmile; 'The New Year Bird Census'; 'A Disastrous Trip,' W. F. Henninger; 'An Improvident King Bird,' Lynds Jones; 'The May Horizon'; 'A Door-yard List of Birds,' R. Le Baird. Prof. Lynds Jones points out that the Cerulean Warbler, instead of being a rare breeder, is, on the contrary, not uncommon in almost any part of Ohio where conditions are at all favorable. Mr. Comey in his list of the birds of Holderness includes 91 species, 87 of which are summer residents. The 65 species recorded from the same locality by Mr. Faxon ('Auk,' V) are indicated by a star. The illustration of the double Vireo's nest is interesting in showing the two structures equally complete, placed side by side on diverging twigs, and each containing eggs The New Year Bird Census, which was carried on in about twenty localities, demonstrates how difficult it is to secure long lists of birds during wintery weather, since 28 species was the highest record made, and five observers only saw upwards of 20 species.—A. K. F.

The Emu.—The April number of 'The Emu' completes the third volume of this valuable quarterly. The frontispiece depicts in colors two hitherto unfigured species of Honey-eaters. Among other interesting articles is one by Alex. Wm. Milligan, describing a trip to the Wongan Hills, western Australia, illustrated by several half-tones, one of which shows on old egg-mound of the Mallee-fowl.

In an article on 'Birds Occurring in the Region of the Northwest Cape,' by Thomas Carter, is an amusing account of a tame Straw-necked Ibis which became great friends with a young kangaroo dog, engaging with it in play, preening its fur and guarding it when asleep. We are glad to learn that the Lieutenant-Governor of New Guinea has issued an order prohibiting the destruction of Birds of Paradise, "in most portions of the possessions, so that they may not become extinct."—W. DeW. M.

Bird-Lore

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OFFICIAL ORGAN OF THE AUDUBON SOCIETIES
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Bird-Lore's Motto:
A Bird in the Bush is Worth Two in the Hand

A Letter From Florida

The editor has just completed a tour of observation through parts of Florida, in the results of which, so far as they affect the future of bird protection in the state, BIRD-LORE'S readers may be interested.

The region passed through extends from Kissimmee to Lake Okeechobee and thence to the east coast at Sebastian. The Kissimmee river trip is made very comfortably by boat, two days being required to reach Bassinger from Kissimmee. The remainder of the trip was made by wagon, camps being made by the way.

After passing through the lakes and reaching the Kissimmee river, one voyages through a vast marsh. The river is narrow, barely wide enough in places for the passage of the quaint little steamer; birds are abundant, and there is doubtless no journey in Florida, if indeed there is in the United States, where the tourist can see so many kinds of birds to such advantage.

Seven days were passed encamped near the heavily forested north shore of Okeechobee, and three days were consumed in driving thence to the east coast. No opportunity was lost to acquire information concerning the plume-bearing Herons and Paroquets, which once thronged this region, and it is probable that a fairly correct idea of the status of these birds was obtained. The 'Plume bird,' or Snowy Heron, is practically extinct. Not one was observed or reported. The White Egret exists in small numbers; not more than a dozen birds were seen and only a single rookery was heard of. This was said to have been formed in the upper St. John district, about sixteen miles west of Sebastian. News of its formation was accompanied by the statement that it had been "shot out." This, it may be added, in the writer's opinion, is the certain fate of every rookery of aigrette-bearing Herons, unless an armed warden be detailed to guard it day and night.

No law will ever prevent robbery, if the temptation to thieve be sufficiently great; and with Herons' plumes worth twice their weight in gold, there are hundreds of ex-plumers waiting to loot any rookery which becomes large enough to make the returns worth the risk of prosecution.

Paroquets are apparently very rare, though it will probably be years before the species becomes extinct. Only twelve individuals were observed, and diligent inquiry showed that the species has greatly decreased in the past ten years,—though no cause for this diminution is evident.

Reaching Indian river at Sebastian, Pelican island was visited and found to have been wholly deserted by the birds, not a Pelican old or young being seen. Six hundred and fifty nests were found on two small neighboring islands. These were all occupied in January, when Warden Kroegel reports that a heavy norther raised the water and flooded all the ground nests, while many of the young birds which escaped drowning were starved, the parents being evidently unable to provide for them. The old birds are now scattered along the coast, and it is not probable that any further attempt will be made to nest this year.

Subsequently the site of a Wood Ibis rookery at the head of the Sebastian river was visited. Four years ago, the writer found it occupied by several hundred pairs of birds, and nesting with them were White Herons and Water Turkeys. Today the great cypresses do not support one occupied nest, and we now turn toward the Keys, in the hope of finding some isolated place where primæval conditions still exist.—*Miami, Florida*, May 2, 1904.

The Audubon Societies

"You cannot with a scalpel find the poet's soul,
Nor yet the wild bird's song."

Edited by MRS. MABEL OSGOOD WRIGHT and WILLIAM DUTCHER

Communications relating to the work of the Audubon and other Bird Protective Societies should be addressed to Mrs. Wright, at Fairfield, Conn. Reports, etc., designed for this department should be sent at least one month prior to the date of publication.

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Upon the Necessity of Accuracy

Not content with a field of action so broad that it would seem sufficient for even the ambition of his Satanic majesty—the Father of Lies has, of late years been invading the realms of nature, and, clad in seductive and apparently harmless garb, offered, alack! fatal temptation to walkers in the wood paths, who, either for love of mental adventure or pushed by the spirit of greed, have sometimes obliviously, but in many cases deliberately, perverted truth and brought not only the contempt of the honest upon themselves, but, worse yet, have caused much ridicule to be cast upon the entire class of writers who are popularizing natural history and the life out-of-doors.

To do this today, when the stress of life makes the contemplation of the world of nature a necessary counterbalance, is not only foolish but a crime, indeed, because it destroys values and puts a false standard before the eyes of the very children that it

professes to teach. It is like teaching a child the outlines of the great events of history through sensational novels and then expecting him to be content with a subsequent course of dignified history. After the lurid envelopment of an overheated imagination, the truth, however wonderful in itself, must seem cold and bare indeed.

In all nature work, and especially in investigations relating to birds and their protection, should the greatest accuracy be maintained. Any sportsman will testify that to overshoot the mark is generally to scatter shot further afield than to undershoot; and thus sentimental exaggeration, toward which there is at present such a pitiful rush by many who, knowing better, persist in using its methods to win their willing and ignorant audience (and the ignorant are often in the majority), will ere long be a spent force.

To paraphrase a truism—The truth of nature thrown to earth by the lack of mental balance among a few authors will surely rise again, but we do not wish any of our zealous bird protectionists to be found among those victims meshed in war who cannot rise, even upon the wings of their own imagination, in the company of truth.

M. O. W.

National Committee Notes

BY THE CHAIRMAN

To emphasize the necessity of incorporation, which has been brought to the attention of the Audubon members in the last two issues of BIRD-LORE, it is only necessary to present the following letter:

AUDUBON SOCIETY OF AMERICA
New York, N. Y. April 21, 1904

"Kindly send me your exact corporate name for the purposes of a bequest. I suppose you have some descriptive pamphlet which contains it, and I ask for as early an answer as possible."

This letter shows that the work of the Audubon Societies and the continual agitation of the subject of bird protection by letters, leaflets and newspaper articles is commencing to bear fruit; it is an important economic subject which must attract the attention of philanthropic people who will finally endow the National Committee with a sufficiently large sum to guarantee the continuance of all branches of Audubon work.

A prominent attorney in New York City has volunteered his services and is now looking into the matter of incorporation; i. e., whether it will be better to incorporate in Washington or in New York City; the former being the national center, whereas the latter is the financial metropolis. It is probable that before the August issue of BIRD-LORE is published the Committee can announce that the physical act of incorporation has been completed, when it will be necessary to call the attention of citizens throughout the country to the fact that the National Committee of Audubon Societies has a legal status and can hold real estate or other property in the nature of a permanent endowment to carry on the work of bird protection in perpetuity.

This being the year when most biennial legislatures do not meet,—this branch of committee work has not been so arduous; although at times it has been of rather a strenuous nature, and the result in a number of states has been of a very decidedly retrograde character, showing how important it is that the work of bird protection shall be placed upon a permanent basis. If the education of the public is not persisted in, all of the results accomplished in the past few years can be wiped out in a shorter time than it took the milliners' agents to almost exterminate the Terns of the Atlantic coast,—and this every bird-lover knows was done in about two years.

In Massachusetts the legislature is struggling with a bill to protect the Hawks and Owls; whether the members can overcome the ingrained prejudices of generations regarding these two classes of birds is still uncertain.

In the adjoining state of Rhode Island the legislature has retreated so far into the dark ages that they have actually passed a law providing a bounty on Hawks, Owls and Crows, notwithstanding the united efforts of the sportsmen's clubs and the Audubon Society to prevent its passage.

The disastrous experience of Pennsylvania and some other states that adopted bounty laws did not serve as a warning to Rhode Island. Fortunately the taxpayers of a commonwealth always insist on the speedy repeal of bounty laws as soon as the excessive cost is realized.

How men who claim to be intelligent, or to represent the best interests of a community, can pass a law to pay a bounty for destroying beneficial birds is past understanding; it is parallel with a great deal of the legislation of the present day, which is often harmful, largely unnecessary and unwarranted, and, in many instances, unconstitutional.

In New York state a determined effort to repeal the law preventing spring shooting of water-fowl was finally defeated; this was only done, however, after the most active resistance on the part of the ornithologists and other scientific men of the state, and the sportsmen's associations; it was a small section, Long Island, against the balance of the state. That the result of this law will work for good there is absolutely no doubt, as the Long Island waters, which are one of the great resting-places of water-fowl during the northward migration, are now protected after the first of January.

From Maine it is reported to the Committee that the Eider Ducks are being shot by the fishermen, notwithstanding all the attempts that are made to protect the few remaining birds. There are probably not over 100 pairs of Eider Ducks that still breed in the state of Maine, and it seems as though all public spirit and pride were lost when men are selfish enough to wish to kill the very last pair of birds breeding in their state, instead of trying to foster and protect them, for the benefit and enjoyment of descendants. Such ideas may be too Utopian for the ordinary man or woman, but it is necessary for the Audubon Societies to spread them broadcast if birds are to be preserved for our children and grandchildren.

In New Jersey a second bill was introduced to permit the killing of Robins by fruit-growers; this bill was defeated by as large a vote as was the first bill.

For three years the Audubon Society and all the decent sentiment of the state of New Jersey endeavored to pass a law to prevent the shooting of Pigeons over traps; various influences, not decent but very potent, defeated the bill for two years; the third attempt was made this year, and the history of this legislation is so peculiar and so interesting that it is given in detail as a warning to legislators who do not respect public opinion and as an encouragement to Audubon workers.

After the bill was introduced it was sent to the Fish and Game Committee of the House, and, notwithstanding all the efforts to move it from that committee, it was held until a short time before the close of the session, when petitions began to flow into the legislature in such numbers, demanding that the bill be brought on the floor of the House, in order that it might be acted upon, that the committee dared not withstand public opinion, and the bill was passed by a very large majority. Unfortunately, only five days of the session remained when the bill was sent from the House to the Senate; it was there referred to the Committee on Miscellaneous Business, and the same tactics were employed to defeat the bill that had been employed in the House; it was not reported out of the committee and the legislature adjourned without the Senate having an opportunity of acting on this bill which had been passed almost unanimously in the House.

The feeling of indignation was so strong in the state, as voiced by the press, that Governor Murphy felt compelled to put the taxpayers of the state to the expense of a special and extra session of the legislature in order to consider what was known as the *Pigeon Bill*. Even at the special session of the legislature there was one legislator who had the effrontery to try and kill the bill; however, it was passed in a few moments, after having been three years before the legislature. This shows how the ordinary politician respects a thoroughly aroused public opinion. The work of the Audubon Societies is primarily to arouse such public opinion, both by education and organization, so there will always be a demand for

beneficial laws and their enforcement. This same legislative body at the request of a few selfishly interested sportsmen repealed the law of 1903, stopping the spring shooting of Shore Birds or Snipe. The bill was so ingeniously drawn that these birds may be shot whenever they can be found in the state, the close season being so arranged that it covers the period when the birds are not found in the state. Governor Murphy approved the bill, notwithstanding the fact that its retrograde and harmful character was pointed out to him by well-known ornithologists. His act was one more nail in the coffin of this class of birds, which are rapidly disappearing, owing to the wasteful and sinful practice of shooting them while on their migration to the breeding-grounds.

Virginia also took a retrograde step by repealing the law of 1903, giving protection to the Hawks and Owls; these unfortunate but entirely beneficial birds were placed in the excepted class.

The legislature also added to the excepted birds Wilson's Snipe and the Knot, commonly known as the Robin-snipe. An attempt was made to exempt all of the Bay Birds or Snipe from protection, but a few of the legislators who have always shown a very decided and intelligent interest in the preservation of the birds of their commonwealth made so strenuous a fight that the law protecting Snipe in the spring of the year was not repealed except so far as it applied to Wilson's and the Robin-snipe.

The model law was introduced in the legislature of Iowa, but it was not adopted, although the secretary of the Schaller Society, Miss Hamand, spent three weeks at the Capitol at the request of the National Committee, endeavoring to have this bill and an anti-pigeon shooting bill passed. The committee to whom the model law bill was referred reported adversely upon it on the ground that the bill was too drastic. It is a singular commentary on the intelligence of a committee that it can report a bill as too drastic that is drawn solely in the interest of agriculture; a political bill might be considered too drastic, but a bill for the preservation of birds, which are the greatest check nature provides for keeping down the myriads of insect pests that are always working against the interests of the farmer, cannot be made too strong; it is a case where men are called upon to act on a matter they know nothing of and are either too careless or indifferent, or give too little time intelligently to study the subject themselves, and who, for some reason, are unwilling to accept the statements made by scientists who are competent to give them expert advice.

Fortunately the anti-pigeon shooting bill was passed, so that Iowa now has stopped this barbarous sport, and has thus removed a stain from her good name.

In Ohio, the mass of citizens stood idly by and let a handful of the lowest class of sportsmen insist upon the passage of a bill removing protection from a bird as absolutely beneficial as the Dove. The legislator who introduced this bill came from Darke county. What a happy coincidence between the name of the county and this legislation : Darke, dark—either way you spell the word the significance is the same.

The introducer of the bill stated that he had no apology to offer, and that he could see no reason why the state of Ohio should fatten Doves that the people in the South might shoot them in the fall. This shows the importance of a uniform and strong sentiment throughout the whole country for the protection of non-game birds; it also illustrates very forcibly the influence that the action of the citizens of one state have over those of another state.

It is sincerely hoped that the better class of sportsmen in Ohio were not a party to this legislation and will not participate in the wasteful practice of killing as harmless, innocent and valuable a bird as the Dove.

Unfortunately ten days were added to the open season for shooting wild fowl in the spring; this is a backward step, much to be regretted, and not at all in line with the best sentiment of the present time. A bill permitting the trapping and caging of Cardinals was also introduced, but was fortunately defeated, although only by the narrow margin of two votes.

In Mississippi the model law was adopted, and that commonwealth now has the honor of having joined those states that are taking

an intelligent interest in the preservation of their birds; even the beneficial Hawks are protected, although the unfortunate Owls were not included in the list of protected birds.

The legislative fight is now on in the state of Louisiana, the session having commenced on the 1st of May, when bills for the protection of the game and none-game birds were introduced.

A great deal of splendid preparatory work has been done by the Louisiana Audubon Society which should, and it is hoped will, accomplish the passage of the bills; however, a most determined fight may be expected, as it is found that there is a class of sportsmen and bird epicures who are objecting to any law that will not permit them to kill "nice, fat Robins, Catbirds, Wood Thrushes and Red-eyed Vireos." These birds have so long been sold in the markets of New Orleans for the "pot" or "toasting fork" that it is hard for some people to relinquish this privilege; further, the cage-bird dealers, i. e., those who want to capture and ship out of the state, to foreign countries, Mockingbirds, Cardinals, Nonpareils and Indigo Buntings, will join forces and try to defeat bird legislation. However, the decent sentiment of the state is becoming aroused, as they see staring them in the face the fate of Texas with its boll-weevil scourge.

If Louisiana passes the model law this year every coastwise state of the United States will have adopted the law with the exception of South Carolina, Alabama and California; and it must be said to the credit of Alabama, what cannot be said for South Carolina and California, that no attempt has ever been made by the Committee to have the model law adopted.

Warden service has been arranged for the present year in all of the localities covered at the last breeding season, and in addition the Committee are protecting the breeding Water Birds in the lake region of Oregon, in coöperation with Mr. J. W. Baker, Game and Forestry Warden.

The Committee is pleased to report that the Navy Department has directed the Superintendent of the Cable Company at Midway Island to prevent the destruction of the birds of that island.

It is pleasant to confirm the statement made in March Bird-Lore, that an Audubon Society would be at work in California before the June issue was published; on March 25 the organization was accomplished at Pasadena; it is exceedingly active and will exert a great influence at the next session of the legislature. The plan proposed is to establish local or county societies throughout the state, each with its own officers, and also to organize a state federation which will become a part of the National Committee. The work of organizing additional societies is going on rapidly under the guidance of Mr. W. Scott Way, secretary, who is proving himself to be a first-class leader; he is being ably seconded by the trenchant pen of the friend of birds and forests, Mrs. McCrackin, of Wrights.

Educational work is progressing satisfactorily; the South Carolina Audubon Society is thoroughly awakened to the importance of educating the people of their state so that at the next session of the legislature a demand will be made for a satisfactory bird-law. In Michigan the Audubon Society is making great strides and will undoubtedly be able to have the model law adopted at the next session of the legislature.

The demands for the educational leaflets of the Committee are greater every day, especially from state and county superintendents, teachers and libraries. It is greatly to be regretted that the National Committee is not in a financial position to make a systematic and determined effort to place our educational leaflets in every public school in the country.

The demand for the Snowy Heron or aigrette leaflet still continues very large, and it was only a few days since that a request was received from the Royal Botanical Society of London for a complete set of the educational publications of the National Committee for display in the educational pavilion of the Grand Horticultural Exhibition to be held in June.—W. D.

NATIONAL COMMITTEE OF AUDUBON SOCIETIES

EDUCATIONAL LEAFLET NO. 9

THE RED-SHOULDERED HAWK

Order—*Raptores* Suborder—*Falcones* Family—*Falconidæ*
Genus—*Buteo* Species—*Buteo lineatus*

The Red-Shouldered Hawk

BY WILLIAM DUTCHER

Chairman National Committee of Audubon Societies

DESCRIPTION

Adults.—Upper parts dark fuscous-brown, each feather edged with rusty, except on lower back, which is without edging; wing-coverts and upper tail-coverts barred and tipped with white; throat rusty white, streaked with blackish; rest of under parts bright rusty, varying greatly in shade, all feathers either spotted or barred with white, the bars being more pronounced on the belly; some specimens show considerable black on breast or belly, principally as shaft-lines; wing with the four outer primaries (wing quills) notched, that is, abruptly narrowed near end, all barred with black and white; shoulder of wing deep rich rusty or chestnut, this being a conspicuous distinguishing mark, giving one of the common names of the species, *Red-shouldered Hawk;* tail crossed by four or five white bars and with white tip; under side of tail feathers gray instead of black; feet yellow, claws black; bill black, bare skin at base of bill (cere) yellow.

Young.—Upper parts like adult, except being less rusty and not quite so dark; under parts whitish, tinged with buff, deeper on thighs, profusely marked with large dark brown spots on breast and belly; thighs plain or with very small spots; wing without white barring of adult; base of primaries pale cinnamon, whitish on inner side of feather; tail grayish brown, faintly barred, showing more or less rusty near base of feathers, with some broken white bars on under side of feathers.

Florida Red-shouldered Hawk (*Buteo lineatus alleni*). Adults of this form of the Red-shouldered Hawk are much smaller than those of the typical species, and can be distinguished by the grayish white head, which lacks rufous, the decidedly grayish upper parts and the paler buff and faintly barred under parts. The shoulders, however, are the characteristic rusty or chestnut, but not quite so marked as in *lineatus* proper. The young of this race cannot be distinguished except by smaller size and locality where found (see note on distribution).

Red-bellied Hawk (*Buteo lineatus elegans*). Adults: Lower parts much brighter and deeper reddish brown than in *B. lineatus;* upper parts brighter and clearer black and white, except on the head, which shows much more rusty. The characteristic red shoulder patch present.

Size.—The male Red-shouldered Hawk (*lineatus*) varies in length, 17.50 to 19.50 inches from tip of bill to end of tail; female is much larger, varying from 19 to 22 inches. The Florida Red-shouldered Hawk (*alleni*) is much smaller than true *lineatus*, while the Red-bellied Hawk (*elegans*) is almost as large as *lineatus*. Note that the females of all the Hawks and Owls, commonly known as Birds of Prey, are much larger than the males.

Nest.—The nest of *lineatus* is built of sticks and is lined with strips of bark of various kinds, sometimes evergreen twigs, dry grass, dead roots and feathers; it is placed at an average height of fifty feet from the ground, generally in a deciduous tree, although sometimes in a pine. *Alleni* usually nests in pines and sometimes in cypress trees, while *elegans* builds in cottonwoods, oaks, giant cactus, pines, etc., sometimes not more than ten feet from the ground.

Eggs of lineatus and elegans.—Two to six in number, the average set being white to pale yellow, more or less heavily smeared, blotched and spotted with different shades of brown, fawn color, vinaceous buff and pearl gray, and showing an almost endless variety of patterns.

Distribution.—*B. lineatus* inhabits all of eastern North America, north to Nova Scotia and southern Canada; west to Texas and the great plains; typical *alleni* is found only on the Florida peninsula; *elegans* is found on the Pacific coast from British Columbia south to Lower California; also from western Texas to the Pacific.

The generic name of this hawk, *Buteo*, a buzzard, is of very ancient origin, being mentioned in the writings of Pliny; its specific name is from *linea*, a line, referring to the streaking of the plumage. The western form *elegans*, meaning elegant, probably refers to the beauty and special brightness of its feathers, while the southern form is named in honor of Dr. J. A. Allen, the well-known ornithological student and writer. There are twelve species and subspecies of Buteos in North America, four of which belong to the Red-tailed Hawk group, and three to the Red-shouldered family. Without a single exception the Buteos are valuable aids to the agriculturist, as will be shown in detail later. As a class they are rather heavy, deliberate fliers, much given to soaring in circles at a great height. At other times they are prone to select some point of observation on a dead limb in the tree districts, or a knoll in the prairie regions, where they will remain in perfect repose for a long period, seemingly asleep; however, any attempt to approach them by an observer quickly shows that they are alert and watchful. Unfortunately, the harmless and beneficial Hawks of the Buteo tribe are the scapegoats of all that is bad in the Hawk family and are made to suffer for most of the sins that a

very small leaven of facts, magnified by the prejudice and ignorance of ages, has swollen to a very mountain of crime. Without reason they are called "Chicken-hawk" and "Hen-hawk," simply because a farmer from time to time may miss from his flock of barnyard fowl a pullet or hen, or may find their scattered feathers where a tragedy has occurred. The farmer does not for a moment consider that this crime may have been committed by a fox, skunk, mink, weasel, cat or some other carnivorous animal, but at once attributes it to a Hawk, and immediately registers a vow to kill every Hawk that he sees without reflecting that by so doing he may be killing one of his best friends.

Farmers are not the only persons who have a prejudice against Hawks, for it is unfortunately too true that a large percentage of sportsmen attribute the rapidly diminishing numbers of game-birds to Hawks, and consequently never fail to kill one when an opportunity occurs. There is really very little doubt but that an increase in the number of Hawks of the Buteo class would result in an increase of game-birds, as the Hawks would reduce the number of small predaceous mammals that are so destructive to the young of game-birds.

It is certainly a very short-sighted policy on the part of any one to condemn Hawks on hearsay evidence; in human affairs no court will permit the admission of this kind of testimony, and why should it be considered when birds are on trial? The proper method to judge of the good or evil that Hawks do is to consider the results of a thorough and scientific investigation of the food of a large number of Hawks collected from widely separated sections of the country and at all seasons of the year. Under certain circumstances an individual Hawk may be guilty of doing harm owing to his particular surroundings, but that is no reason for condemning all Hawks, any more than it would be for charging with crime every citizen in a village because one misguided individual was caught robbing the bank.

The subject of the economic status of Hawks is one of great importance, and the agriculturist who is not willing to carefully examine all of the evidence presented certainly is not living up to the advanced ideas of the twentieth century, but is still groping in darkness. The wide-awake farmer investigates every problem that will enable him to increase his products a pound or a bushel. If it can be proved that Hawks destroy enormous quantities of insects and vermin that are known to be a serious menace to agriculture, should they not be protected as valuable auxiliaries to this industry, which is by far the most important and valuable of all that engage the attention of man. It is purposed to present to the farmers of the country as rapidly as possible a series of illustrated leaflets giving the true economic status of the Hawks of North America, and it is hoped that every person who reads the series will carefully weigh the evidence furnished, and if it is shown by unimpeachable scientific facts that the species treated of is of value, let the farmer not only protect the Hawk in question but insist that his neighbors shall do likewise.

The following evidence regarding Red-shouldered Hawks is taken from the report of the Ornithologist of the State Board of Agriculture of Pennsylvania, 1890:

"In my examinations of 57 of these hawks [red-shouldered] which have been captured in Pennsylvania, 43 had been eating field-mice, some few other small quadrupeds, grasshoppers and insects, mostly beetles; nine revealed frogs and insects; two, small birds, remains of small mammals and a few beetles; two, snakes and portions of frogs. The gizzard of one bird contained a few hairs of a field-mouse and some long black hair which appeared very much like that of a skunk. The bird on dissection gave a very decided odor of skunk. In two of these hawks, shot in Florida, I found in one, portions of a small catfish, and in the other, remains of a small mammal and some few coleopterous insects (beetles)."

In 1893 the United States Department of Agriculture presented the following results of stomach examinations:

The stomachs of 220 Red-shouldered Hawks were examined, of which only 3 contained poultry; this is only about 1¼ per cent of the total number examined, showing how very little harm this species of Hawk does to the farmers' chickens; 12

stomachs contained parts of small birds; 102 stomachs contained mice of different species; 40 others contained small mammals; reptiles were found in 20 stomachs, and batrachians in 39—i. e., frogs, etc.; 92 contained insects; 16, spiders; 7, crawfish; 1, earth-worms; 2, offal; 3, fish; while 14 were empty at the time of examination. This evidence, which is indisputable, shows not only the harmless character of these birds, but it also shows most emphatically that they are of the greatest benefit to agriculturists, as nearly 50 per cent of them had been eating mice, which are very destructive to the farmers' crops and trees.

In the same report the following statements are made, which are additional evidence emphasizing very forcibly the fact that the Red-shouldered Hawks deserve protection:

"A correspondent of the Department of Agriculture, resident in Owego, Tioga county, New York, states that a pair of Red-shouldered Hawks reared their young for two years in a small swampy piece of wood about 50 rods from a poultry farm containing 800 young chickens and 400 ducks, and the keeper stated that he had never seen a Hawk attempt to catch one."

These Hawks, as shown by the stomach examinations, feed on insects to a considerable degree, and the report further states:

"Among the insects which are destroyed in considerable numbers may be mentioned grasshoppers, crickets and various kinds of beetles and caterpillars. Even in December and early January, when apparently all insect life is in a dormant state, specimens of the Red-shouldered Hawk are found whose stomachs are filled with one or more species of these insects."

The writer of the Government report, Dr. Fisher, concludes by saying:

"To sum up, the food of this Hawk consists of at least 65 per cent of small rodents, which are very injurious to the farmer, and less than 2 per cent of poultry. It seems hardly necessary to more than mention this fact to an intelligent person to convince them of the folly and short-sightedness of destroying this valuable bird, and of the necessity of fostering and protecting it in the farm lands and orchards."

Dryden says, "The field-mouse builds her garner under ground," but the stores with which it is filled are stolen from the farmers' crops. Every farmer knows the enormous number of these small rodents that can be found in a corn field at the time of husking, and although each mouse destroys but a small amount of grain or other vegetable matter, yet the aggregate amount that is lost on every acre must amount to a great deal in the course of a year on a farm of one hundred acres. These small mammals are numerous in species and are very prolific, and if their numbers were not kept in check by the so-called Birds of Prey they would soon become a serious menace to agriculture. If the farmers of the country could have a Pied Piper of Hamelin to rid them of their rodent pests they might not need the aid of Hawks, but Browning's weird creation cannot be summoned in this matter-of-fact age. The Buteo family will serve the farmer as well today as the Pied Piper served the storied Brunswickers.

"And, whether they pipe us free from rats or from mice,
If we've promised them aught, let us keep our promise!"

The only promise that the farmer has to give the Hawks for the valuable service they give him is that they shall be protected at all times, and shall be permitted to build a home and occupy it in peace; surely this is a small recompense for such inestimable service.

Study Points for Teachers and Students

Trace distribution of each race on map. Which kind is found in your locality? Does it remain with you in winter? What is the distinctive plumage feature which suggests name? Describe as many as possible of the vermin destroyed by this Hawk. Describe the differences between carnivorous animals and rodents. How many species of each have you in your locality? Send to the Committee any personal reasons you may have for protecting this Hawk. Who was Pliny? Dryden? Browning? When did they live and write?

For valuable information regarding the Red-shouldered Hawks, consult the reference-books named in Leaflet No. 8, Marsh Hawk.

Additional copies of this leaflet may be procured of William Dutcher, chairman, 525 Manhattan avenue, New York City.

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Bird-Lore

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DEVOTED TO THE STUDY AND PROTECTION OF BIRDS

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. VI JULY — AUGUST, 1904 No. 4

Red-eyed Vireos, Awake and Asleep

By FRANCIS H. HERRICK

With photographs from nature by the author

THOUGH commonly shy and retiring, wild birds are not always difficult to approach, and one is often reminded of their marked individuality by finding a pair which are comparatively tame. The female, to be sure, usually displays the greater confidence, at least within the magnetic influence of nest and young.

This was the case with the Red-eyed Vireos, whose nest was discovered by the sharp eyes of a child four years old, in a maple tree beside a house and close to a well-trodden path. The child had made no mistake, for there on the nest sat the mother-bird. When we saw her half rise to her feet every little while, and with head depressed examine something with eager attention, then we knew there were young birds, for it was the twenty-eighth of June. By the aid of a mirror we were soon watching three little Vireos, which had just emerged from their shells. The old bird would follow closely every movement of the pole, and flit off quietly only when the glass nearly touched her head.

For four days the mother brooded almost continuously. She would sit for ten or fifteen minutes, go off without a sound, and in a moment return warbling to the twig, bringing a gray caterpillar or a snow-white moth; then we noticed the cocoons and green larvæ of insects, spiders, and, later, small dragon-flies. As she hopped along the slender spray and stood erect over her nest, three delicate heads on skinny necks were quickly upraised, trembling like tuning forks, presenting as many yellow targets to the aim of the parent, who tucked deep into the throat of each the destined food. After examining and cleaning the nest, brooding was again resumed. Life seemed to move in an orderly routine like clockwork, varied, to be sure, by casual events, such as the approach of the male or a change in the weather. The eyes began to open on the fourth day, when the first faint cheeps of the young were audible at a distance of a few feet.

The male sang much, but seldom fed his young. Whenever he did descend with food he was inclined to linger at the nest, and block the path of his more active mate, who was eager to brood. With querulous notes the impatient female would then peck and pull at his neck-feathers, until he seemed to take the hint, and move away.

On the day following there was a steady downpour of rain until mid-afternoon, but, to our surprise, the brooding was frequently interrupted. Once we noticed that, as the male approached with an insect, the female

FEMALE RED-EYED VIREO INSERTING FOOD INTO THE THROAT OF A YOUNG BIRD

began to twitter and shake her wings. Thus, division of labor sometimes reaches this stage; the little hen broods, while the cock purveys the food. At other times when the male announced his presence, the female would utter a rolling chirp, and with vibrating wings retire before her mate, who performed the routine duties of feeding, but seldom entered the nest. Again she would give chase with drooping and quivering wings, as if to take the insect from him, but in this she did not succeed. Such actions are commonly witnessed, during the period of sexual activity, in many birds, and their meaning is not far to seek. The noisy celebration of the Fourth

did not disturb the tranquillity of these little workers, who would not even wince when a cannon firecracker was exploded in the street below.

When the young Vireos were a week old I began to watch their nesting habits at night more closely, and found that, while the male apparently roosted near by, the female invariably slept on the nest. At from fifteen to twenty minutes after sundown she was regularly at her post, and even at

THE BIRD SHOWN IN PRECEDING PICTURE, ASLEEP ON HER NEST

Photographed after sundown with exposure of five minutes, July 5, 7.05–7.10 P.M. The head turned to the left side (and directed to the right of the picture), is buried up to the eyes in the feathers of the back

this hour usually fast asleep. So profound, indeed, were her slumbers, that I could often enclose her in my hand and stroke her feathers without awaking her. She slept with her head twisted back and buried deep in the feathers between the shoulders. An apparently headless trunk or a little ball of feathers was all that could be seen, and the only motion discernible came from the regular pulsations of breathing.

In this manner the mother apparently passed the night, unless disturbed. When aroused by a ruder movement of the hand, she would peck feebly at a raised finger, but if not further molested the eyes would gradually

close, and the heavy head turning slowly on its axis settle down on the soft cushion again. If actually driven off she would return in a second, and in another moment would be fast asleep.

On a quiet evening, just after sundown, the camera was mounted on a suitable platform, and two photographs were made of this sleeping bird without awaking her. In the first the plate was exposed for five and in the second for twenty minutes, both yielding good prints, allowing for the regular movements of respiration.

The sleeping habits of birds do not appear to have received much attention, and are often difficult to observe. That they vary not only in different species, but with the season and other conditions is obvious. When not breeding, many of the smaller perching birds seek the dense coverts or foliage, which afford protection from cold as well as from enemies. Grouse are sometimes found enclosed in light snow; Quail huddle in dense covies on the ground, where they pass the night; birds of prey, like Hawks and Eagles, sleep at odd intervals by day or night, with the head buried in the feathers of the back. The diurnal sleep of Owls and Goatsuckers is more readily observed. The male Robin has been known to pass the night at a long distance from its nest. In a community of the great Herring Gull, which knows no repose by day or night, the old birds take frequent naps at all hours, and either while on the perch or the nest. This Gull will occasionally doze with head drawn in and eyes closed, but usually conceals its head in its feathers like a Hawk or Vireo. But, if at the such times, the Gull is dull of sight, its hearing is keen, for at an alarm it will suddenly throw up its head and with outstretched neck scream loud enough to be heard for half a mile. Some of the Pheasants sleep with the head either drawn in on shortened neck, or turned back and concealed. So far as I have observed, the same bird always turns its head to the same side in sleep, and this seems to follow as a matter of course from the force of habit.

When we analyze the tameness of such a bird as the Vireo just described, we must recognize two elements which enter into the problem in varying degrees,— the sum of its daily experiences and the strength of its instincts,— both of which are subject to constant variation. In this instance the strength of the brooding and other parental instincts undoubtedly tended to allay the temporary sense of fear and to increase the apparent tameness observed. One cannot help feeling that such profound sleep could not conduce, in the long run, to great length of life in either parent or offspring.

This nest was not disturbed beyond removing some obstructing leaves, and was not watched beyond the tenth day, when the wing-quills were growing apace. We were glad to learn, however, that the brood was safely reared, and we hope it made a good passage southward in the fall.

The Nesting Habits of the White-tailed Ptarmigan in Colorado

By EVAN LEWIS

With photographs from nature by the author

PREVIOUS to starting out to hunt the nest of the Rocky Mountain or White-tailed Ptarmigan in 1890, I had never been in their summer haunts in the nesting season. Having been referred to a man in Denver who claimed to have hunted Ptarmigan at all seasons of the year, he told me there would be no difficulty in discovering their nests if in a region where they were found in any number. He said they always nest among the small willows that grow anywhere above timber-line.

As I had seen flocks of over five hundred Ptarmigan at one time on Mount Evans and around Chicago Lakes, that was the ground selected for hunting them. Instead of finding them in flocks, only single pairs were to be seen and in many cases one male or one female. When a male bird was flushed it usually rose with the scream or whistle peculiar to this species. The cry was usually taken up by another male within hearing and in a short time the birds were fighting and chasing each other till one was driven back to his own grounds. The females were seen only near nightfall, either feeding on insects that had fallen during the day on the large snowfields or on the young shoots of alpine clover. This feeding, if on clover, was kept up till it was too dark to follow the bird to its nest; if on insects, the bird usually made a number of quite prolonged flights which carried it safely beyond observation.

On June 18 a nest was found, the bird merely leaving the nest as the foot was about to fall on it, and in less than fifteen seconds was again covering her eggs. The nest was a mere hollow in the ground that looked like the work of the bird herself. A little dried grass and a few feathers was all that kept bird and eggs from resting on bare ground. Contrary to expectations, there was not a willow within one hundred feet. One or two gnarled piñon trees stood about fifty feet away. The nest was not round but elliptical in form, and the bird never went on the nest except the long way of the ellipse, sitting facing either the east or the west.

The search was then renewed and continued till July 7, but on entirely different ground, as the willows were avoided. The result was two old nests of the preceding year, with the egg-shells still in the nest. One of these was on a very small bunch of grass more than half way to the top of what is known as Mount Goliah, just east of Lower Chicago Lake, in a rather deep wash for that mountain; the grass spot was just out of the way of the water. In this case no willows were nearer than two thousand feet. The other old nest was on the same slope of the mountain, about half a mile farther north.

In 1892, learning that a photograph of this bird on its nest was in demand, I spent another month in the search. Only old nests were found. One of these was under some rocks but on the grass. It was in one of the places where the sun melted the snow off, while the rock kept it from falling there. The search was continued one month every year, but no nests containing eggs were found till 1901.

At that time I was carrying a small camera and taking photographs of all kinds of nests that came in my way while looking for Ptarmigan. I had

WHITE-TAILED PTARMIGAN ON NEST

started south from Echo Lake, through the timber, toward the top of the mountain. A Ruby-crowned Kinglet was seen carrying moss and its nest discovered and tree marked.

On reaching timber-line a Junco was seen building, and a search was made for a loose stone to mark the spot for a photograph when the set was complete. In the search I was just about to put my hand on a Ptarmigan when I saw what it was. I then made two exposures with the small camera and left the camera on top of a large rock to mark the spot, the nest being three steps and one foot due south from the mark. I went to the cabin at the lake and got the large camera and tripod. When I returned I took three rather shorter steps, as I supposed, and looked for the bird or its

nest. For ten minutes I looked over the ground foot by foot. I could not believe my own eyes that the bird was not there, yet I could not see her. At last I was about to return to the mark and step the ground over again, when a reflection from the bird's eye showed her to me just one foot from where I was standing.

The camera was set up and several exposures were made. One of the resulting photographs was reproduced as a frontispiece to BIRD-LORE. (Vol. III, December, 1901.) The eggs, six in number, were also photographed.

This nest, like the one found in 1890, was elliptical in shape, but the bird would go on her nest only from the east and always sat with her head to the west. The bird would return within a few feet of her nest and then dart suddenly at the head or the hand of one handling her eggs. There were no willows near the nest, and the eggs, six in number, were partly incubated when discovered June 21.

In 1902 I was in California during the nesting season of the Ptarmigan, but last year a nest was found on July 5 by Mrs. Douthwaite, of La Fayette, Colo., on James' Peak, near Loch Lomond, containing seven eggs. This bird was frightened from her nest by dogs and threw a number of her eggs out and down over the rocks, where they were broken and were found to be incubated almost to hatching.

This nest was also elliptical in shape and the bird always sat facing the east. A number of dead willow twigs and grass had evidently been carried together by the bird herself to make this nest. Unlike the other two I have seen with bird on nest, this bird was not so well concealed by her surroundings and, as shown in the accompanying photographs, was plainly visible.

A PTARMIGAN CHICK

Altogether I have seen three nests containing bird and eggs and four complete sets of eggs, besides over twenty old nests containing only the last year's egg-shells and a few feathers; and while I must confess but little knowledge of their nesting habits, this much I claim — that they never nest in the willows but in the open, depending on their color for protection ; that they remain sitting till nearly or actually touched by the human foot or hand ; that they place their nest differently in different seasons owing to the amount of snow, and that different individuals vary in the season of nesting, as I have seen young birds full-grown and on

same day (August 5, 1900) I saw chicks half-grown and others apparently just hatched. The photograph of the chick was one of those seen that date. This chick was held on the hand till the camera was focused and exposure made. It went about three feet toward the old one and then stopped to feed before going farther. The old bird showed more fight after the young one had safely returned to her than while we were holding and photographing it. The conduct of both adult and young, unless alarmed, is about the same in the presence of men as that of ordinary domestic fowls. Their food in summer-time is insects and young grass or clover, in winter-time willow or birch buds. During the molt of August and September some birds are too weak to fly and can be caught, and they must often become the prey of foxes and coyotes at that season.

CHIMNEY SWIFT

Photographed from life, by R. H. Beebe, Arcade, N. Y., July, 1903

A Visit to the Lake Erie Terns

By GERTRUDE FAY HARVEY

With photographs from nature by ROBERT F. GRIGGS

HEN and Chickens, or, to speak more definitely, Old Hen, Big Chicken, Little Chicken and Chick, form an insignificant group of islands in western Lake Erie. They are quite devoid of attraction to all save the naturalist, a fact for which he is duly grateful.

Old Hen contains several acres of ground, is fairly well wooded, and has a boat-landing and a farm-house which is occupied during the summer season. The Chickens are barren gravel piles in the midst of the water, offering neither food nor shelter to any living thing. They are the home of the Terns, for whom a mere resting-place is sufficient, and who find on these stones the things most needed — seclusion and freedom from pursuit. These Terns, known as the Common or Wilson's Tern, or more picturesquely, Sea Swallow, are of the same species as those which frequent the Atlantic coast.

Terns, unlike Gulls, which are seldom seen except in open waters, haunt the shores and bays, and are familiar to all who visit the lake-cities and islands. They soar slowly over the water at the side of excursion boats, often with bills directed downward, watching for their prey. Suddenly one descends, thrusts its bill into the crest of the wave and rises in an easy gliding curve — unsuccessful. Judging from the number of attempts the birds make before capturing one fish, their way of life must be difficult indeed. They perch on the poles where fishermen spread their nets; they travel tirelessly back and forth and around, singly or in groups, one of the loveliest and most distinctive features of our lake scenery. The glistening pearly feathers and wide-extended wings, the red of bills and feet, the sharp contrast between the shining black of crown and neck and the shining white of throat and breast, attract the attention of the most careless observer. They live entirely on small fish, and are as harmless as Hummingbirds. Like Hummingbirds, too, they have been sacrificed chiefly to the plume-hunter's greed and women's thoughtlessness. The dainty birds are very effective as ornaments; and what do the women know, or the plume-hunters either, of the gentleness, beauty and charm of the wild, living Tern?

Birds like these, which find their food and make their homes away from the haunts of men, seem peculiarly at the mercy of an invader when tracked to their homes. Their eggs and young are on the open ground. The parent birds, panic-stricken by the strangeness of the attack, hover helplessly about, merely uttering their distressful cries. A single Catbird will make a brave fight for her young. Several together are afraid of nothing on earth. These thousands of Terns, with strong

wings and powerful beaks, are utterly helpless. The seclusion of their existence seems to have left them incapable of dealing with an outside element.

A year ago I visited the nests on Little Chicken Island. At that time we found a few young birds and a great number of eggs. Most of the young birds were not more than a few days old, and often a chick would be in the nest with unhatched eggs. This year our visit was made just three days later, but the nesting season was much farther advanced. On both occasions I was one of a party from the Ohio Lake Laboratory at Sandusky.

The little party who visited Hen and Chickens last July consisted of two women with opera-glasses and note-books, and three men with botanical cases and camera,—a very harmless, sunburned, unconventional company. We made our start from Put-in-Bay, one of the most picturesque islands of the lake, and famous as the scene of Perry's victory. Our launch was engaged the evening before, so that we were ready for an early start. At six o'clock we were on hand, eating a picnic breakfast on the boat landing. At seven our engineer appeared, and, an hour and a half later, we landed on "Old Hen," delighted to reach firm land after a ten-mile ride in the trough of the waves.

This island is at a considerable distance from any other of its size, and is in itself an interesting study. Tame pigs and chickens seemed at first the only inhabitants. Sheep, rabbits and a perfectly fearless fox-squirrel were next discovered. Ring-necked Pheasants, Marsh and Crow Blackbirds, Kingbirds, Olive-sided Flycatchers and Pewees, Red-eyed Vireos, Song Sparrows, and Sandpipers seemed to constitute the whole bird stock of the place. The island is rocky, mostly covered with soil heavy enough to sustain large trees, but exposed about the shore, where wild flowers and mosses flourish in the clefts. Great masses of rock have broken away from the mainland and slipped down, leaving narrow fissures in which the water plays with a gurgling, slapping sound. In some places the industrious waves have brought quantities of pebbles and heaped them up between the masses of granite, forming a sort of beach. Sandpipers dodged in and out among the rocks as we followed them and then reappeared, walking on the pebbles at the water's edge.

A skiff was secured from the boat-house, and at ten the party set out for Little Chicken. From a distance we noticed several Terns flying over the island. As we approached, the birds rose from it in a cloud, scattered, returned, and hung over our heads, screaming and circling wildly about. We landed cautiously, fearful of stepping on the eggs or young birds which lay everywhere on the stones. The island is a mass of boulders, many of them hardly larger than a man's fist. Its whole surface, above the usual high-water line, is used for nesting. Where drifted sea-weed or chips are

available, the birds utilize them as a bed for the eggs, otherwise they lay them on the bare rock. The nests are often only a foot apart, the eggs inconspicuous, and it required the greatest care to avoid treading on them. The eggs were in sittings of two or three, rarely four, buff or ashy with spots of lilac and brown. At the time of our visit, July twenty-fifth, most of the eggs were hatched and we found great numbers of young birds, varying from newly hatched chicks to full-grown birds that ran quickly away and disappeared. The little birds either snuggled out of sight among the stones or ran to cover.

Many young birds lay dead on the stones among the nests, victims, perhaps, of family feuds or lost to their parents and dead of starvation. They could not have fallen from the nest, as land-birds do, nor could they have been trodden on by heavy-footed animals, the presence of which Mr. Chapman suggests may explain the great number of dead young among the Terns which he visited on Penikese Island.

One of the women, covered over with gray cambric, crouched down among the boulders; the other, similarly draped, hid among some scrubby willows which grew along one shore. The photographer retired to the far end of the island and the other men rowed away, promising to return for us in the afternoon.

Before long the birds began to return, first the young and then the adults, most of the latter with fishes in their bills, minnows about three inches long being the usual catch. It took a long time for them to settle, nor did they do so confidently during our whole stay of four hours. The island was soon covered with birds, but the flock above seemed as large and as noisy as ever. They would drop down, hover over their nests, perhaps touch the stones, and then rise again screaming and resume their whirling, distracted flight. Again and again this happened before the birds gained courage to alight. As the flock sank lower and more of the birds settled on the ground, I distinguished two calls,—one harsh, shrill, complaining, the other low, clucking. Many of the birds carrying fish uttered this call, and on alighting ran about as though looking for their hungry families. Within each of those hundreds of mother-birds, to the spectator as like each other as so many leaves or pebbles, raged the conflict between terror and mother-love. In many cases love triumphed and brought the trembling birds to the very feet of the invaders.

Near my station under the willows lay a large log, under which I knew that at least three little Terns were hiding. Presently one of the birds flew down, hovered for a moment with upward slanting wings and dangling legs, and then dropped to the ground. It carried a fish and advanced toward the log, calling softly. She was within about twelve feet, and I could clearly see the delicate tinting of her wings, and her full bright eyes. One of the little birds ran toward her with gaping bill. She turned and

walked away, and the disappointed youngster ran back under the log. Again she advanced and a second bird ran out, also to be refused. Then she arose and joined the noisy flock above. Presently she or another came back and repeated the performance. From the testimony of the other watchers, this scene was enacted again and again in different parts of the island. Did the mother change her mind at the last moment, and decide that it was unsafe to bring her little ones into the open and feed them in the time of disturbance, or did she find that they were not her own? In the latter case, the little ones, who plainly expected to be fed, are less discriminating than the parents, or perhaps they merely recognized the food. I did not see any birds actually fed, though a great many old Terns walking about with laden beaks were visible from my hiding place, and in many cases they seemed to dispose of their prey before taking flight.

THE TERNS LEAVING THE ISLAND

The photographer, however, was more fortunate. On his end of the island there was very little cover, and half a dozen chicks were caught in the open and remained in plain view. To these the old birds came with food, and after many false starts and many retreats, they succeeded in finding the right chicks, disposed of their burdens and flew away. This seems to indicate that the bird under my observation was unable to find her own young, as timidity would have had more effect in the open than in the more sheltered position. One case related by the photographer was very comical. A mother hunting for her little chick invariably went too close to a full-grown 'squab.' (When just hatched they resemble young chickens, but at this stage they are much like young pigeons.) This greedy fellow made a dive for the minnow and succeeded in catching hold of it. The old bird tried to rise and carry it out of reach, but the squab had firm hold and after much flapping and struggling she yielded and went away for

another. The poor birds seem to have as hard work satisfactorily disposing of their catch as they have making it in the first place.

The great number of the birds and their exact similarity and quick movements made individual observation difficult, unless the bird was very close at hand. Exceedingly graceful in the air, with an enormous spread of wing, on land the Tern is handsome but ungraceful, appearing much too heavy for his slight feet. At the moment of alighting he is beautiful; once on the ground, he moves with a weak, uneven gait. Hundreds of these jerking, waddling figures crossing and recrossing in the field of vision give little chance of studying any one bird.

The willows under which I was hiding grew at one side of the island on a shelving shore, along which some half-grown birds were wading. A Least Sandpiper, the only alien we saw in the colony of Terns, lingered in the shallows for a while. Farther out there was almost constantly a flock of Terns swimming about in the water. Most of them were young birds, distinguished from the adults by less brilliant coloring of bills and feet and by brownish tints in the pearl gray of the body. These birds would occasionally swim to shore and waddle up and down on the pebbles for a while and then go back to the water. The presence of this large flock of swimming birds explained the sudden disappearance of most of the full-grown young soon after our coming to the island. Incapable of sustained flight, if indeed they could fly at all, the birds ran to the water and escaped. Many of them returned and settled down after we had been hidden awhile. Evidently the birds are strong swimmers long before they can fly. Perhaps in the course of evolution the birds' ancestors were swimmers before they were flyers — and the life history of the individual follows the same order. These birds paddled about serenely, close together, like a flock of Ducks.

From the report of other observers who have made a longer visit to the Tern islands, the birds keep up their noise incessantly, even though there be no one in sight. So we had no hope that the whole flock would become quiet. By noon, however, the birds were fairly well settled, and at a little distance I could see crowds of adult birds walking about or crouching among their little ones. Now and then a flock would rise, adding their cries to the tumult overhead, and we knew that the photographer was moving his camera. His task was a difficult one. He had brought a long piece of tubing, thinking to hide at a distance and take pictures in peace, but the birds, which were somewhat afraid of him, were in deadly terror of the camera, and preferred the man to the machine. The young birds, protected by their coloring, at first remained motionless, seemingly unfrightened. On being touched or moved, however, so that they knew they were discovered, they scurried away, to hide under stones or driftwood, and nothing could induce them to come out and face the camera.

There are two methods of self-protection in universal use among animals

too young or too weak to fight; one is hiding, the other running away. Both of these schemes were practiced very skilfully by the little Terns. When we first landed we saw many of the half-grown birds making off, and in a few minutes the island seemed almost deserted. Many of the larger ones had taken to the water; but when we looked closely under stones and amongst the rubbish we found, to our surprise, that the place was still swarming with birds. Every plant had a chick at its root, and under logs and overhanging rocks there were sometimes a dozen. The hiding places of the chicks are generally close to the nests. These are often

NEST AND EGGS OF COMMON TERN

on windrows of driftwood or rubbish, with whose colors their brownish speckled down blends perfectly.

The older birds run away from the nests and hide among the stones, which match their developing feathers better than the debris. It may be observed here that while the newly hatched birds match the nests, and the half-grown ones the stones, as they grow older and gain power of flight, the protective coloring is lost entirely, and the adult is a creature of beautiful and striking contrasts. Of the 'squabs,' many play the trick of the Ostrich, sticking its head into sand. If they can find a cover for their heads, they are content to have the rest of the body in full view. The one photographed was so confident of his safety that it was only with much vigorous prodding that he could be dragged out. Many 'freeze in their tracks' without trying to conceal themselves at

all. One of these was killed by having the tripod leg set down upon it. Another was photographed as he rested between two rocks in the water. Every wave lifted him and tossed him against the stone; but he lay absolutely still, with his eye on the invader. Another crawled under a shelving rock, where every wave splashed over him. He looked like a hen caught in a thunder-shower, and must have been very uncomfortable; but he never budged. These birds were not quiet merely in the sense of being relaxed; they were holding still, with every muscle rigid. The photographer had an experience which illustrates this: One of the birds floating in front of the camera was carried by the water out of the field. The photographer took him by the beak and steered him back into position. He did this repeatedly, and said that the bird held its neck so stiff that it seemed like moving a wooden decoy. He even declared that he could have picked the creature up by the bill and held it out straight and stiff. As he did not try the latter experiment, it is possible that the bird would have remonstrated. The muscular effort involved must, of course, be very great; and one wonders how the birds can maintain it for such a length of time. When finally aroused, however, they are like the chicks,— very active. The one held in the hand to be photographed fought fiercely with his strong beak and flapped his long wings vigorously until he was released, when he flew away at a great rate.

The day was warm, the heat reflected from the rocks oppressive, the stinging flies troublesome — but we were all surprised and disappointed when the rising of all the birds from the island announced a fresh arrival, and the grating of a boat on the pebbles told us that our friends had come for us. We tried a few farewell shots at some protesting chicks, but succeeded in getting only blurs, indicating their hurried departure from the field of action. Then we climbed into the boat and pushed off. As we looked back from a distance, the whirling, shrieking cloud sank lower, and the Terns, fully reassured for the first time since our arrival in the morning, went back to their homes and their little ones.

We had chosen to watch a few birds closely rather than have a briefer view of a great number. During our stay the other members of the party had visited Big Chicken and Chick Island. Big Chicken has several good-sized trees and a fisherman's hut. On this island were reported Terns in greater numbers than on Little Chicken and very many Black Terns with the others. The Black Tern is a smaller and less timid bird. It nests in marshes, and its presence in flocks with the common Tern is hard to explain. It is usually seen about the shores and lowlands and is said to feed entirely on the insects which abound in such places. We had often noticed them flying with the Common Tern over the water, but were surprised to find them here in mid-lake in such numbers.

Chick Island, the explorers informed us, had no nests upon it, but was entirely occupied by Herring Gulls, which were perching on it as close as they could stand. One gentleman carried a great handful of Gulls' feathers which he had picked up on the rocks.

On our return journey the launch passed near the other island. From Big Chicken a flock of birds, like that from the island we had visited, rose and scattered, filling the air with their shrieks. The most amusing and novel spectacle was Chick Island, which was almost covered by Herring Gulls. We did not approach near enough to alarm them, but watched through our glasses the sedate and pompous birds, standing almost erect upon the rocks. The Gull is much heavier and less graceful than the Tern, and the contrast is even stronger between the birds resting than on the wing. They are also much larger and darker in color. There they stood, ranged in rows one behind the other, soberly clad in drab and brown, apparently assembled for educational or religious exercises. Possibly they use the islet as a roosting place at night and had come early to secure choice accommodations. Or perhaps they are not absolutely tireless on the wing and spend part of their time resting and digesting their food. I have often seen them in the evening flying over the lake when it was so dark that their forms were barely distinguishable from the water. It was about half-past four that afternoon when we passed the island. We watched the almost motionless birds till they were no longed visible against the gray background of the rocks, and we did not solve the riddle.

WOOD PEWEE ON NEST

Photographed from nature, by L. S. Horton, at Hyde Park, N. Y., July, 1903. The nest was in an apple tree, seven feet from the ground

For Teachers and Students

The Migration of Warblers

FIFTH PAPER

Compiled by Professor W. W. Cooke, Chiefly from Data in the Biological Survey

With drawings by Louis Agassiz Fuertes and Bruce Horsfall

YELLOW-THROATED WARBLER

Wintering abundantly in southern Florida and sparingly north to South Carolina, but little can be said of the migration of the Yellow-throated Warbler in the Gulf States. The northward movement begins early in March and the average date of arrival for fifteen years at Raleigh, N. C., is March 26, earliest March 13, 1890; the average at Asheville, N. C., for four years is April 21, the earliest April 13, 1893.

The Yellow-throated Warbler is one of the very earliest fall migrants, beginning its southward movement before the middle of summer and reaching Cuba the latter part of July. The last noted at Washington, D. C., was September 4, 1890; at Raleigh, N. C., September 17, 1886, and many migrants continue to pass through Florida during the whole month of October.

SYCAMORE WARBLER

This Mississippi Valley form of the Yellow-throated Warbler arrives on the north coast of the Gulf of Mexico about March 10, and spends a month in moving slowly north to St. Louis, Mo. Central Indiana is reached about the middle of April, and the average date of arrival for ten years at Petersburg, Michigan, is April 21.

The southward migration begins so early that the Sycamore Warbler appears in Guatemala by the middle of August. The last do not leave Indiana and Missouri until October.

GRACE'S WARBLER

Grace's Warbler spends the winter in northern Mexico and breeds north to La Plata county, Colorado, but the only migration record I have is of its arrival April 27, 1902, in the Huachuca Mountains of Arizona.

BLACK-THROATED GRAY WARBLER

The species enters southern California the first week in April and reaches southern British Columbia the third week in the month. The

earliest dates in southern Arizona and southern New Mexico are included between April 6 and April 9, while the species appears in the northern portion of its range in Colorado early in May.

The last do not leave central California until the first week in October and do not desert the state until after the middle of the month.

Notes on the Nesting of the Lawrence's Warbler

By ISAAC BILDERSEE

ON May 15, 1903, Dr. Wm. Wiegmann observed a Lawrence's Warbler (*Helminthophila lawrencii*) in Bronx Park, New York City, but did not see the bird again that year. On May 18, 1904, he again observed an individual of this species in the same locality. It was carrying nesting material. On June 6, the bird was observed carrying green larvæ, presumably to its young. On June 8, Dr. Wiegmann and I observed the bird at various times during about five hours. Its song, which is described elsewhere in this article, was first heard by us on that day.

On June 10, I remained for about seven hours near the place where we had seen this rare Warbler, but I could not find our bird. I had seen a female Blue-winged Warbler fly into a certain thicket of catbrier and second-growth of dogwood several times during the day, and, in order to confirm suspicions that I had formed, I concealed myself among some near-by bushes and waited. At the end of half an hour I was rewarded by seeing the Blue-winged Warbler fly in with food, accompanied by the Lawrence's Warbler. The female immediately dropped to the ground, while the Lawrence's Warbler stayed in the vicinity (at times less than ten feet from me). After five minutes the Blue-winged Warbler flew away, the Lawrence's Warbler taking her place on the ground. The Lawrence's Warbler waited until the Blue-winged returned and then flew away with her. It was by this time too dark for further observations. On June 12, in company with Mr. Waldron Dewitt Miller, of the American Museum of Natural History, I paid another visit to the vicinity. In less than five minutes we found the nest, which contained six fledglings, evidently about a week old. The young could not, at that time, be distinguished from the fledglings of either the Golden-winged or Blue-winged Warblers. Mr. Miller and I observed the birds during the remainder of the morning. The parent birds paid frequent visits to the nest, averaging about five minutes between their trips. The female stayed on or near the nest for about eight minutes each time, the male, or Lawrence's Warbler staying only about three minutes.

On June 13, the young were perceptibly advanced. At this time the

remiges and greater coverts were fairly well developed. On June 14, I could see that traces of yellow were present on the breast. The middle of the belly and the jugulum were still bare. The wings showed well-defined white bars. On June 18, Dr. Wiegmann and I made a thorough search of the vicinity, but found no trace of the parent birds, the nest or the young. The day before this, Dr. Wiegmann had seen the nest in place, but empty, except for some undried excrement, and frequent visits to the vicinity have been of no avail.

The nest was placed on the ground (not in a depression). It was at the foot of a goldenrod (Solidago) beneath the tip of a spray of beech and in a tangle of catbrier and second-growth of dogwood. In the immediate vicinity were beech, red cedar, pin-oak and chestnut trees. The nest was covered with a few dried beech leaves that may have fallen from the tree above. It was a typical Blue-winged Warbler's nest and was arranged in concentric layers, the inner layer being composed of red cedar shreds, the outer layer consisting of dried black oak leaves.

Three different songs were noted, all, of course, being given by the male, as follows:

(a) *Shre″-e-e, zwe-e-e-e*, the first syllable like that of the song of the Golden-winged Warbler, the second like that of the song of the Blue-wing. This was the song most frequently heard.

(b) *Shree-e, shree, shree, shree*, the typical song of the Golden-winged Warbler.

(c) *Chip-a-chip-a-chip-a-shree.* The first phrase of this song is exactly like the song heard during the second song period of the Blue-winged Warbler, the second being a typical Golden-wing syllable.

Besides these three songs we heard a sharp call-note—*tzip*—and a thin scolding note when we came too near the nest.

I append a description of the Lawrence Warbler: Above bright olive-yellow, brighter on occiput, becoming golden yellow on forehead and front half of crown; chest, breast, and fore-abdomen pale yellow (paler than in a female Blue-wing), obscurely mottled with dusky; crissum and under tail-coverts white; a broad patch on the side of the face occupies the entire auricular region; a broad triangular black patch occupies the gular and jugular region and the chin; this patch is terminated by a very convex posterior border which almost joins with the auricular patch; a yellowish white malar stripe separates the two black patches; wings dusky, tinged with slate, and, in some lights, with a bluish tinge; greater wing-coverts edged with white, producing two conspicuous, parallel wing-bars; tail dusky, each of the two outer feathers (on each side) broadly marked with white, the third feather on each being merely tipped with that color.

It will be seen that this bird differs in several particulars from the specimen figured in the last number of Bird-Lore.

Notes from Field and Study

A Strenuous Screech Owl

During the summer of 1903 my feeling for Screech Owls underwent a decided change, a large degree of respect being added to the fondness already felt for the species. It was all due to a family of five young ones which were discovered one day late in May, perched along a branch about thirty feet above the carriage drive. The parents were near and furnished good examples of the two extremes of color, one being decidedly gray, the other as rusty as a Thrasher. The youngsters were about evenly divided as to color; and how comical they were as they craned their necks to look down with those big yellow-rimmed eyes, or hunched up their shoulders till the heads were literally buried among the soft feathers!

All the afternoon they sat there in the sun scarcely changing their position, though the old birds had shifted; but about seven o'clock the familiar quavering call aroused them. The rusty parent appeared presently, and by short flights and many low calls—both the usual tremulous note and a soft '*coo coo coo coo*,' that reminded me of the Mourning Dove—persuaded the little ones to leave their perches. But as it grew darker the rusty Owl began to object to my presence, flying past with loud cracking of the bill and sometimes a sharp '*yow yow!*' and finally struck me on the side of the head a soft enough blow save for the pair of claws that seized my scalp with a grip that made me sympathize with any mouse they might fasten upon. The bird was gone in an instant, but I had no desire to prolong the experience.

A few weeks later the same family, presumably, moved into some trees near the house, and any one who approached that quarter after dusk was likely to hear many bill-crackings and angry, snarling notes, as the old bird—always, so far as I could judge, the rusty one—swooped past the intruder. At first we often replied to the calls, but this made the rusty Owl so furious that it several times darted under the roof of the piazza and past our heads, and at last was emboldened to make another personal attack, this time slightly breaking the skin of the victim. The danger to eyes was too great, and all our calling was stopped. After that the birds made no trouble beyond angry notes and snapping, and by August even these ceased.—Isabella McC. Lemmon, *Englewood, N. J.*

Goldfinch and Tree Sparrow—Difference in Feeding

I noticed last winter a marked difference in the manner in which the Goldfinch and Tree Sparrow procure the seeds of the evening primrose when feeding upon the stalks sticking above the snow. The Goldfinch flies to the cluster of seed-capsules at the top of a stalk, and clings there while it extracts the seeds with its bill. The Tree Sparrow, on the other hand, alights upon the stalk and shakes it vigorously—making the seed rattle—until it has shaken out a number of the seeds, when it drops down to the snow and picks them up.—Chreswell J. Hunt, *Philadelphia, Pa.*

Taming a Red-eyed Vireo

While walking through the yard of Harvard University, Cambridge, last summer, my wife and I noticed, at the foot of some shrubbery near Appleton Chapel, a young Red-eyed Vireo in the early stages of learning to fly. Just above our heads, in the drooping boughs of one of those fine old elms, was the parent bird with food for its fledgling. To our surprise, before we could move away it dropped down into the bushes and fed the little fellow. Anxious to see how close the old bird would venture, we placed the young bird higher up in the bushes and took our stand close by. On her return the old bird did not hesitate, but came within a few feet of us and deliv-

ered her dainty morsel. Then, by placing the young bird on the forefinger and holding it in the bushes, we succeeded in persuading the mother to feed her young several times. To find out how much courage she would develop, my wife held the young bird on her hand several yards from the bushes and entirely clear of them. When the old bird came back, the first time her heart failed her and she hovered about us and then flew back to the elm. As we remained quietly, though there were many passing along the walk, she fluttered about and finally fed her young. This was repeated several times, usually with considerable scolding. Though we could not induce her to light on the hand, lack of time prevented us from carrying our trials any further. The fearlessness of the bird was surprising to us, never before having had such confidence shown us by a parent bird. We felt confident that with patient effort the mother would have lighted on our hands and fed her offspring. The amount of courage she did show, however, is worthy of note.—SAMUEL C. PALMER, *Swarthmore, Pa.*

Mockingbirds in New Jersey

In the middle of the month of November, 1902, I saw a Mockingbird in the garden of a neighbor, who told me that it had been around for several days and had been noticed by other neighbors. I watched him for some time and might have let the incident pass had I not been told by Mr. Kimball C. Atwood, of Oradel, N. J., that he saw a Mocking-bird feeding on the berries of a vine overhanging his piazza, early in January, 1903. The bird appeared cold and hungry. He put out a squirrel's cage with food; the bird entered and was caught. He was transferred to a Mocking-bird cage and given tempting food, but became very restless; he evidently had not been reared in confinement. A few weeks later, while Mr. Atwood was in Florida, and hearing the songs of the free Mockers, the captive bird died. The question arises, Was this the same Mockingbird I saw five miles farther west a few weeks before, or was it one of a nest that had been reared here? A pair of Mockingbirds bred near here, where the Home of Incurables now stands, some twenty years ago, but I heard nothing of them after that summer.—HENRY HALES, *Ridgewood, N. J.*

A Thieving Chebec

On June 2, I found, in a small maple sapling by the side of a brook, a Yellow Warbler's nest containing four eggs. The mother-bird did not seem to object to my looking into her nest, but when I had withdrawn a short distance she began to chirp angrily. Turning around, I saw the cause of her trouble. A Chebec, or Least Flycatcher, flew to the side of the nest, and hovering on its wings began to pluck out some of the building material.

The poôr Yellow Warbler, that had spent so much time and pains upon her cozy home, succeeded in driving him away, but not until he had stolen nearly all he could carry in his bill.

It seems very probable to me that the Chebec was building somewhere a nest of its own and so counted itself very fortunate (until it was driven away by the Yellow Warbler) in finding so much easily procured material.—ADDISON WILLIAMSON.

Two Years for an Oriole's Nest

For many years the Baltimore Orioles have nested in the elms about our house. Whether it is the same pair each year or not I cannot say, but I am inclined to think it is.

Two years ago they did not build near us as usual, so I was glad to find them at work in 1903, on a nest quite near the house. My pleasure, however, was short-lived, as the nest was deserted before it was half completed, and the birds disappeared from the neighborhood. About the middle of May, 1904, while looking at this unfinished nest, I saw a female Oriole fly into it and pick at it here and there, while her brilliantly colored mate flew down close to her and acted as though he wanted to help; but I have never yet seen a male Oriole working on a nest,—perhaps Madam objects. Since that time she has worked steadily, and now (May 23) the nest looks nearly finished.—FRANK T. ANTES, *Canandaigua, N. Y.*

Book News and Reviews

THE AMERICAN NATURAL HISTORY: A Foundation of Useful Knowledge of the Higher Animals of North America. By WILLIAM T. HORNADAY. Illustrated by 227 original drawings by Beard, Rungius, Sawyer and others; 116 photographs, chiefly by Sanborn, Keller and Underwood, and numerous maps and charts. Charles Scribner's Sons. New York. 1904. Royal 8vo. xxv + 449 pages.

This handsome volume treats of mammals, birds, reptiles, amphibians and fishes. One hundred and forty-one pages are devoted to birds, some one hundred and eighty North American and a few extra-limital species being dealt with. Lack of space has evidently forced the exclusion of such common species as Wilson's and the Hermit Thrushes, the Field and Chipping Sparrows, and other equally familiar birds, but, doubtless, enough are included to form the "foundation" the author has in view, for a broader knowledge of ornithology. A foundation, however, should have no weak places, and before this book passes to the succeeding editions we sincerely trust it will reach, it deserves a careful technical revision. The statements, for example, that "Alaska is yet to be heard from" in regard to Song Sparrows, that the Chuck-will's-Widow replaces the Nighthawk in the South, that the Black Skimmer "on our shores is a visitor of great rarity," and others equally incorrect, have no place in a work of this kind.

Song being the bird's most attractive characteristic, it is to be regretted that in a volume destined to have so wide a circulation as the one under consideration, fuller justice has not been paid to the musical powers of birds. The Bobolink, for example, is declared to be merely "a very acceptable singer"; the Chat, it is said, "has no regular song," no mention whatever is made of the vocal powers of such musical species as the Scarlet Tanager, Baltimore Oriole and Goldfinch, the song of the Ruby-crowned Kinglet, the author states, has "quite escaped" him, and since he does not remember ever having heard the Rose-breasted Grosbeak sing, he concludes that it can be "no great singer, not more than third-rate, at the best. . . "!

Perhaps, however, after all, descriptions of a bird's song may best be left to the bird itself, and Mr. Hornaday was wise in permitting the birds to deal with this subject while he pleads their right to the protection their great economic value to man should win them. Bird protection is, indeed, the text of many an eloquent sermon in this volume, and here Mr. Hornaday lays the stones of his foundation with no uncertain hand. With equal force he writes of recent imaginative, so-called 'nature books,' and his condemnation of this insidious type of literature should be taken to heart by every would-be naturalist.

No small part of the value of the portion of this book relating to birds is due to its numerous and generally excellent illustrations. Nearly one hundred of these are by Edmund J. Sawyer, whose work clearly entitles him to a place in the front rank of American bird artists. — F. M. C.

NORTH AMERICAN BIRDS' EGGS, by CHESTER A. REED, B.S. Illustrating the eggs of nearly every species of North American birds. New York. Doubleday, Page & Company. 1904. 8vo. 356 pages.

This book will be welcomed by every bird student as a handy work of reference on the nests and eggs of North American birds. Every species and subspecies found in North America north of Mexico is included. The classification and nomenclature is that of the American Ornithologists' Union's Check-List.

The account of each species is headed by its 'range.' In most cases the distinguishing points of the bird are then briefly stated and frequently short notes on food or habits are added. Here may be mentioned the ingenious use of small marginal figures of the birds which give an idea of their appearance to one not familiar with them. The book

has thus a broader scope than is indicated by its title.

The descriptions of the nests and eggs are of a rather general character, not always as definite and full as might be desired. The data of many of the eggs figured is also given.

The illustrations are the most important features of the work. The egg of almost every species is figured, natural size, and the ground color of the egg is indicated in brackets beneath it. Among the rarer eggs shown are those of the Carolina Paroquet, Solitary Sandpiper and Great Auk.

In addition, there are eighty-five illustrations (fifty of them full-page), reproduced from photographs of nests, most of them with eggs, others with parent or young. Many of these have appeared before in various publications and a considerable number are the work of the author. For the most part, they are very satisfactory. Among the most effective may be mentioned those of the Loggerhead Shrike, Redstart, Woodcock, Grasshopper Sparrow, Ruby-throated Hummingbird, Long-eared Owl and Red-eyed Vireo,—all but the first two showing the old bird sitting on nest.

In the preface the author gives excellent advice to young bird-students, condemning the indiscriminate collecting of eggs and advocating the study of the live bird and the use of the camera for photographing nests.—W. DeW. M.

Bird Life Stories: Compiled from the writings of Audubon, Bendire, Nuttall and Wilson, by Clarence Moores Weed. Book I, Rand, McNally & Company, Chicago, New York, London.

With the very worthy object of supplying teachers with readable and accurate biographies of our common birds, Professor Weed has wisely gone to writers who loved truth no less than birds. Twenty-four species are included in the present volume, and each is illustrated by a colorityp of mounted birds.

The bibliophile will doubtless not approve of the modification of the 'language and punctuation' of the text of the authors quoted from without any indication whatever of the changes made by the compiler, and it is to be hoped that in the future volumes of this series, which are announced, this difficulty will have been overcome. —F. M. C.

The Ornithological Magazines.

The Condor.—The May–June number of 'The Condor' contains four general articles of more than usual interest. Under the title of 'The Home Life of a Buccaneer,' W. K. Fisher gives an interesting account of the habits of the Man-o'-War Bird on Laysan Island, describing the peculiar actions of the male and the inflation of his brilliant red gular sac during the mating season. The Man-o'-War Bird is almost incapable of walking on land but is perfectly at home in the air, so much so that it even drinks while on the wing. Emerson's article on the Farallone Islands gives the results of a visit to the wonderful bird rookery on the California coast in the summer of 1903, and compares the conditions with those which existed at the time of a previous visit in 1887. As might be expected, many changes were found to have taken place and some of the colonies had disappeared during the intervening sixteen years. We can scarcely have too many papers of this kind containing detailed studies of localities or breeding resorts of special interest, but what is especially needed are series of photographs of particular nesting colonies, or definite points, for comparison with similar views of the same spots in the future. Such photographs would bring out more clearly than any description possibly can, the changes which occur after the lapse of a few years.

Mrs. Bailey describes the nesting habits of the Rock Wren in New Mexico, and calls attention to the number of stones found in the nests or arranged like walks in front. Several of the twelve nests examined in 1903 contained a large number of stones, and one had 260 stones, none less than half an inch in length. The question naturally suggests itself, "How general is the Salpinction use of stones, and what proportion of nests have the walks leading away from them?" Price contributes notes on birds found in

midwinter in the High Sierra, and enumerates nine species which are resident at that season. Two other papers complete the list of general articles: under the title 'Explanatory,' Belding gives some unpublished notes collected nearly twenty years ago, during the preparation of his 'Land Birds of the Pacific District'; and Hanna concludes his brief remarks on Nevada Birds. Among the notes 'From Field and Study,' W. K. Fisher records the interesting fact that in March, 1904, several Black-footed Albatrosses were observed executing their peculiar dance on the surface of the water about 100 miles at sea off San Diego, Cal. This interesting performance was first fully described in Fisher's 'Birds of Laysan Island,' and in his article in 'The Auk' for January 1904, pp. 11–14.—T. S. P.

Wilson Bulletin.—The contents of 'Wilson Bulletin' No. 47, which has appeared since our last review, is as follows: 'Some Birds of Olympia, Wash.', J. M. Keck; 'All Day with the Birds,' 'Oberlin all Day with the Birds,' Lynds Jones; 'An All-Day Bird Study,' B. H. Wilson; 'The Song of the Dickcissel,' P. M. Silloway; 'Spring Migration in Lorain County, Ohio, 1904,' Lynds Jones, and 'A Door-yard List from Morton Park, Ill.,' O. M. Schantz.

J. M. Keck includes 117 species in his list of the birds of Olympia, Wash., which is the result of occasional observations during the period between September 1 and May 5. In connection with this paper it might be of interest to consult that of S. F. Rathbone, who has studied the birds of Seattle (Auk, 1902, pp. 131–141), a locality situated a little to the northward on the sound. The migration during the past spring was of unusual interest, since vast numbers of species, far in excess of average seasons, swept northward over the country during the second and third weeks of May. As a consequence, most observers who were in the field for the purpose of being 'all day with the birds' were fortunate in seeing large numbers. The most remarkable list on account of the length, and one which any single observer will have difficulty in equaling, is that of Lynds Jones, who, between 3:30 A. M. and 6:30 P. M. on May 9, identified 128 species in the vicinity of Oberlin, Ohio. With the possible exception of Southern Illinois and the Lower Hudson Valley, we know of no other locality where such a list could be formed.—A. K. F.

Bulletin of the Michigan Ornithological Club.—In the June number of the Bulletin, B. H. Swales completes his 'List of the Land Birds of Southeastern Michigan,' recording 165 species in all. Other papers are 'Some Notes on the Life History of the American Redstart,' by J. C. Wood, and 'Birds in Decoration,' A. H. Griffith. There are numerous notes of interest from field and museum, while a page is devoted to the work of the Michigan Audubon Society. An editorial announces the preparation, by Prof. W. B. Barrows, of a new list of the birds of Michigan.—W. S.

Book News

'The Destruction of Birds by the Elements in 1903–04,' by Edward Howe Forbush, occupies pages 457–503 of the Fifty-first Annual Report of the Massachusetts State Board of Agriculture. It contains a large amount of valuable data, most of which, but for Mr. Forbush's well-directed efforts, would have escaped permanent record.

In the 'Bulletin' of the New York Zoölogical Society (No. 14, July, 1904), under the heading 'A Dangerous Exponent of Nature,' Mr. W. T. Hornaday, Director of the Society, characterizes Mr. William J. Long as "the most visionary writer who has ever appeared before the American public in the guise of a naturalist."

'Our Animal Friends' continues to publish many articles of special interest to bird students. The July number of this magazine contains several bird drawings, by Robert J. Sim, which deserve more than passing commendation.

A revised and enlarged edition of Walters' 'Wild Birds in City Parks' has been issued by the publisher, A. W. Mumford. It is announced that 8,500 copies of this useful work have been printed.

Bird-Lore

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OFFICIAL ORGAN OF THE AUDUBON SOCIETIES
Edited by FRANK M. CHAPMAN
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Bird-Lore's Motto:
A Bird in the Bush is Worth Two in the Hand

THE editor begs the indulgence of correspondents and contributors whose communications, owing to an absence from which he has only recently returned, have remained long unacknowledged.

In this connection it may not be out of place to add a postscript to the letter to BIRD-LORE written from Miami, Florida, May 2, (BIRD-LORE, May–June, p. 103). After some discouraging experiences in the Okeechobee and Indian River regions, it may be remembered that we turned toward the Florida Keys with the hope of finding in these more remote districts some place which has escaped the plume-hunter's attention.

But, alas! Warden Bradley, who had sailed from Flamingo to Miami to meet us, brought only the most unpromising account of the birds in the county under his care. Plumers had looted the great Cuthbert Rookery, killing most of the aigrette-bearing Herons, and other species which it was especially desired to see were not to be found.

In the meantime news concerning Flamingoes was received, which required an early departure for the Bahamas; and since the especial object of our trip south was to study the almost unknown nesting-habits of these remarkable birds, we lost no time in setting sail for their headquarters. The uncertainties of cruising in these waters at this season is indicated by the fact that twelve days were required to make a four days' voyage. Nor did we at once discover the object of our search. Indeed, a month had passed before the birds were actually found. This time, however, we were successful beyond our most ardent expectations. The difficulties incident to photographing and studying so wild a bird as the Flamingo were overcome with surprising ease, and, in the end, a series of photographs was secured which we believe will illustrate in detail the home-life of this species.

SCOFFERS at the necessity for accuracy in nature study, who say that so long as an interest is aroused in life out-of doors the means employed is quite immaterial, would, we trust, have a new conception of the responsibilities of those who seek to lead their fellows afield, rather than astray, after reading Mrs. Wright's admirable editorial on this subject in the last number of BIRD-LORE. In our opinion it would make an Audubon leaflet which could be used to great advantage.

AMONG the notes on Warblers which have been sent, us and of which we will make due acknowledgement in a later issue, none have exceeded in interest and scientific value those by Mr. Isaac Bildersee on the nesting habits of Lawrence's Warbler, published in this issue of BIRD-LORE. Indeed, we may add that the observations therein recorded are among the most definite and satisfactory of any concerning the puzzling relationships of Brewster's and Lawrence's Warblers with which we are familiar.

Reference to the colored figures of all the birds involved, which were published in the last issue of BIRD-LORE, will enable the student to whom specimens are not accessible readily to compare their color characters and at the same time to comprehend more clearly the various theories which have been advanced to explain the status of Brewster's and Lawrence's Warblers.

Observations made at a later date than those given by Mr. Bildersee, by Mr. Miller and others, left little room for doubt that all the six progeny of the Lawrence's and Blue-winged Warbler showed only the characters of the female parent, that is the Blue-wing. Even admitting the truth of this belief, however, it does not follow that the union of the birds was not true hybridism.

The Audubon Societies

"You cannot with a scalpel find the poet's soul,
Nor yet the wild bird's song."

Edited by MRS. MABEL OSGOOD WRIGHT and WILLIAM DUTCHER

Communications relating to the work of the Audubon and other Bird Protective Societies should be addressed to Mrs. Wright, at Fairfield, Conn. Reports, etc., designed for this department should be sent at least one month prior to the date of publication.

Bird Protection Abroad—IV. Japan

By T. S. PALMER

In previous papers of this series attention has been called to the bird-protective measures in force in three important British possessions of the Old World: India, South Australia and New Zealand.* By way of contrast it may be interesting to present an outline of the regulations adopted in Japan, a country which is not only attracting much attention at the present time but one which in recent years has been an important source of supply for certain birds used in the millinery trade.

The Japanese Empire comprises nearly 4,000 islands, which extend from 22° to 50° north latitude. Omitting Formosa, which has only recently been acquired, the four principal islands are Kiushu, Shikoku, Hondo, and Yesso or Hokkaido. These islands are situated between 31° and 46°, thus corresponding in latitude to the Pacific coast of America from the Gulf of California to the Columbia River. Their combined area equals approximately that of Montana, or of New England and the Middle States exclusive of Pennsylvania. Their topography is varied, and the diverse conditions existing at elevations between sea-level and over 12,000 feet, together with the extent in latitude, readily account for the variety in bird life. The birds are, however, still imperfectly known and the distribution of many of the species remains to be worked out.

The general game-law of Japan recognizes two main groups of birds, those which may be hunted during an open season and those which are protected throughout the year. These groups correspond to our game birds and non-game birds. For the first group two seasons are fixed: For Pheasants in general, *Kiji*, and Copper Pheasants, *Yamadori*, the close season extends from March 1 to October 31; for the other game birds it extends from April 16 to October 14, except on Yesso, where it is one month shorter—from April 16 to September 14. Thus six or seven months are allowed for hunting the following birds: Bulbuls, *Hiyo;* Gray Starlings, *Mukudori;* Larks, *Hibari;* Shrikes, *Mozu;* Ptarmigan, *Raicho;* Quail, *Uzura;* Hazel Grouse, *Ezoyamadori;* Doves and Pigeons, *Hato;* and Snipe and Woodcock, *Shigi*.

The birds which are protected throughout the year, and consequently of most interest in this connection, are the following: Cranes, *Tsuru;* Swallows, except Martins, *Tsubame;* Marsh Tit, *Kogara;* Coal Tit, *Higara;* Great Tit, *Shijukara;* Nuthatch, *Gojukara;* Long-tailed Tit, *Enaga;* Eastern Gold-crest, *Kikuitadaki;* Fan-tailed Warbler, *Sekka;* Willow Warbler, *Mushikui;* Japanese Blue Flycatcher, *Ruri;* Flycatchers, *Hitaki;* Paradise Flycatcher, *Sankocho;* Wagtails, *Sekirei;* Wrens, *Misosazai;* Little Cuckoo, *Hototogisu;* Cuckoo, *Kakko;* Goatsucker, *Yotaka;* Scops Owl, *Mimizuku;* Ural Owl, *Fukuro;* Siberian Black Kite, *Tobi;* and Common Buzzard, *Kusotobi*. It is also unlawful to take, buy or sell the eggs or young of any of these birds.

The Japanese game-law contains some admirable features which are found in some of our state laws and which it would be advantageous for us to make more general. Thus explosives, poisons, spring guns, pitfalls and dangerous traps are not to be used in capturing game; shooting between sunset and sunrise is prohibited; permission must be obtained to hunt on cultivated or enclosed lands belonging to another person; no hunting is allowed in the Imperial preserves, *along public roads*, in public parks, in cemeteries, or within the

*See BIRD-LORE, V, pp. 37, 105, 173, 1903; VI, p. 36, 1904.

precincts of shrines and temples; and shooting may be prohibited within certain limits by the governor of a prefecture, if he deems it necessary to take such action.

Licenses are required to trap or shoot, and these licenses must be carried by the owner when in the field, must be returned to the authorities who granted them within thirty days after the date of expiration, and are subject to inspection by police, gendarmes, forest officers, or the chief of a city, town or village. Two series of licenses are in use: *A*, for capture of live birds or game with nets, lime rope or lime twigs, and *B*, for shooting. Each series is issued in three colors, for three different classes of persons, determined by the amount of taxes paid by the holder. First-class licenses (buff) are issued upon payment of 20 yen ($10) to persons paying not less than 100 yen income tax, 500 yen land tax, or 150 yen business tax; second-class licenses (green) are issued upon payment of 10 yen ($5) to persons paying not less than 3 yen income tax, 30 yen land tax, or 20 yen business tax. Third-class licenses (red) are issued to persons not belonging to either the first or the second class. The same rates apply to any members of the holder's family.

It will be noticed that although the law protects a number of birds, and among them several Hawks and Owls, it extends no protection whatever to Grebes, Gulls, Terns, Ducks, Geese or other water-birds or to many of the land-birds. Two species which are conspicuous in millinery trimmings, the White Tern and the Japanese Waxwing, are apparently unprotected. If the list of protected species were extended to include these and some others, and provisions were added covering export of birds or feathers and possession and sale of plumage, Japan would have a law which, properly enforced, ought to accomplish its object of effectively protecting both game- and other birds.

National Committee Notes

By the Chairman

A statesman once said that a country could not be prosperous or happy unless it had a public debt, as otherwise the people would not be interested in the welfare of the state. If this be the correct standard, the National Committee has every reason for congratulation, as, notwithstanding the utmost efforts of the Chairman, along the line of scrimping and saving, a big deficit at the end of the fiscal year is staring him in the face. Wardens must be paid, according to agreement; the educational leaflets should not be discontinued, but all this costs money, and the outgo for some time has been larger than the income, and the balance on hand of the Thayer Fund has been growing less and less. This is our public debt, and how can the Audubon members and the readers of Bird-Lore be happy and contented unless they personally take the matter of finance to heart? The hundred thousand Audubon members in the United States can, with very little individual exertion, secure one dollar each toward the permanent endowment of the National Committee. There are thousands of persons who simply need the work of the Audubon Societies brought to their attention in order that they may become liberal supporters of it. Will not the junior Audubon members, everywhere, start at once a popular subscription of small amounts, to be placed in the permanent endowment fund? How proud and happy every junior will be in after-life to know that he took part in the initial movement to endow and thus perpetuate the work of the Audubon Societies!

By a letter vote, which was almost unanimous, it has been decided to incorporate the National Committee in the State of New York. The corporate name, 'National,' will indicate the scope of the work. The corporation laws of New York State do not make it necessary for more than one of the trustees and members of the Committee to reside in that state. The act of incorporation has not been completed as yet, owing to the time it has taken to determine the state in which to incorporate; however, substantial progress has been made.

Glorious news from Louisiana! The model law for non-game birds will be in force in that state on and after August 9! Look back! Two years since, the effort for good bird-legislation was defeated, and today the state has the best non-game bird-law in the

United States; for the bill submitted by the Audubon Society was the result of all of the legislative experience since Audubon work began. How was this result obtained? Simply by the strenuous efforts of good men and women throughout the state who immediately, after the defeat of 1902, started a campaign of education. When the citizens of a commonwealth learn the value of bird life, the demand for its protection is a natural sequence. How powerful this force can be is illustrated by the following bit of what is now history. House Bill No. 103 was a "*Proposed Law for the Protection of Non-Game Birds. An Act for the Protection of Birds other than Game Birds and their Nests, and to Provide for the Punishment of Violations Thereof.* Drafted and published by the Audubon Society of Louisiana." The bill was sent to a Committee and it was by them reported back to the House, amended in Section 7, relating to the traffic in live birds. It was the last despairing effort of the cage-bird dealers to perpetuate their cruel and wasteful trade. The House did not approve of this amendment, signifying its disapproval by a vote of 82 to 2. It immediately passed the bill as originally offered, by the same vote. June 24 the Senate passed the bill without a dissenting vote, and on June 29 the Governor officially notified the General Assembly that he had signed House Bill No. 103. It takes but a few words to tell this story to the bird-loving public, but it took months of time and much hard labor on the part of the President of the Audubon Society and his co-workers to accomplish the result, which could not have been secured without the great aid given by Mr. Page Baker, managing editor of the 'Times-Democrat,' who gave the most efficient help through the editorial and news columns of his paper. The thanks of all bird-loving people are due for such a high standard of civics. The passage of the model law in Louisiana is the capstone in the arch of legal protection in the United States, as it enables the Committee to prevent the sale and traffic in all parts of the country of such species as Mockingbirds, Cardinals, Nonpareils and Indigo-Buntings, through the enforcement of 'The Lacey Act.' A few weeks since the Chairman visited the store of a bird dealer in New York, and in one large cage saw not less than sixty Mockingbirds, some of them so young that when the cage was approached the poor birds hopped to the wire netting fluttering their wings and opening their mouths to be fed. As nine-tenths of all the native cage-birds offered for sale in the United States were trapped or stolen from nests in Louisiana, the officers and members of the several State Audubon Societies need have no hesitancy in bringing action against cage-bird dealers who persist in the trade; however, it will be prudent in all cases to submit the facts to the Chairman for advice as to how to proceed legally in the matter.

In Massachusetts the effort to obtain protection for the beneficial Hawks and Owls was unsuccessful. The chairman of the Fish and Game Committee advised the introducer of the bill "that the Committee favored it, but thought it had no chance with the House." He suggested, therefore, that it be laid aside for consideration at the next session, and in the meantime an educational campaign be conducted with the members and the rural districts. The sessions of the Legislature in Massachusetts being annual, another effort for this very desirable legislation can be made early in 1905, and in the interim the advice of the Fish and Game Committee can be followed by the Audubon Society. The large number of local secretaries representing the Society should render this special educational work very easy of accomplishment. Notwithstanding all efforts to protect the Least Terns breeding on Martha's Vineyard, the colony seems destined to be gradually exterminated by egging. A visit to Katama Beach by a resident of the Island, who is a warm friend of bird protection and who freely gives his services, revealed the fact that some vandals had visited the breeding-ground and, as far as could be judged by the empty nests, had illegally taken not less than 300 eggs. The Committee at once published in the 'Vineyard Gazette' an offer of a reward of $25 for evidence that would convict the egg thieves.

The splendid legislative work of Mr.

George H. Mackay, of Massachusetts, deserves special mention, inasmuch as, single-handed, he has been the means of securing the adoption of laws the influence of which reaches far beyond the borders of his own state. Among them is the section relating to shore and marsh birds (Limicolæ), which reads as follows: "Whoever buys, sells, exposes for sale or has in possession any of the birds named in and protected by sections five or seven of this chapter, during the time within which the taking or killing thereof is prohibited, whenever or wherever the aforesaid birds may have been taken or killed, shall be punished by a fine of ten dollars for each bird."

That this beneficent law has been the means of saving the lives of thousands of shore-birds during the spring migration of 1904 is proved by the following: Dr. L. B. Bishop states: "Capt. E. Z. Gould, the chief market hunter of shore-birds in Dare county, N. C., writes me that the new Massachusetts law preventing the sale of spring-shot shore-birds has made him give up shooting this spring. In addition to his own gun, he had four men shooting for him in the spring of 1902." Mr. Mackay writes: "You can add to the Gould episode from North Carolina another from New Jersey. W. E. Horner & Co., of West Creek, large shippers of spring birds, wrote to a firm of game dealers in Boston asking how many birds the firm could handle this spring. The reply was that they could not handle any, owing to the new law. Undoubtedly this law affected many other portions of the country; market hunters will not kill birds that they cannot sell or dispose of. The sportsmen of the country certainly owe to Mr. Mackay a debt of gratitude for this admirable legislation, which will do much to perpetuate the fast-disappearing shore- and marsh-birds.

A short tour of inspection along the Virginia coast was taken by the Chairman early in July, the details of which will be given in the annual report of the Committee; for the present it is only necessary to state that the most determined and watchful guardianship will be necessary for a long period to prevent the gradual but sure disappearance of the marsh- and beach-breeding birds of that section.

Mr. William Alanson Bryan, Curator of Birds of the Bernice Pauahi Bishop Museum of Honolulu, H. I., has been in the States for some months on professional work. While he was in New York City a conference was held with the Chairman, with the result that Mr. Bryan will return to his home thoroughly enthused with the idea of establishing a Hawaiian Audubon Society, which will not only undertake to protect the birds of the Island of Oahu, but of all the islands of the Hawaiian group, and in addition such of the other Oceanic Islands as are under the jurisdiction of the United States. To that end he will prepare a detailed statement of the conditions which obtain at the several islands, with the needs for protection and with suggestions as to means to prevent the extinction of certain island forms of birds which have already become exceedingly rare. His report will be addressed to the Chief Executive of the United States, President Roosevelt, trusting that his great interest for bird preservation will cause him to direct the report into the proper channels for governmental aid. In this connection it is suggested that the British and German Societies for the Protection of Birds ask their respective Governments to give protection to the birds indigenous to the Polynesian Islands severally belonging to them. Mr. Bryan states that there is a Japanese corporation which is now actively engaged in collecting sea-birds' plumage for the Berlin, Paris and London feather markets.

Rev. W. R. Lord, of Massachusetts, on the invitation of a number of bird-lovers in Washington, visited in June that far-off northwestern state. During the month he was there he delivered many lectures and gave bird talks to a large number of teachers, scholars and the general public, with the result that great interest in bird protection was aroused. Mr. Lord writes that undoubtedly a little later in the season an Audubon Society will be formally launched in Washington. On his way home Mr. Lord stopped at Detroit, Michigan, and gave an illustrated bird talk in that city under the auspices of the Michigan Audubon Society.

NATIONAL COMMITTEE OF AUDUBON SOCIETIES

EDUCATIONAL LEAFLET NO. 10

THE AMERICAN SPARROW HAWK

Order — *Raptores* Suborder — *Falcones* Family — *Falconidæ*

Genus — *Falco* Species — *Falco sparverius*

The American Sparrow Hawk

By WILLIAM DUTCHER
Chairman National Committee of Audubon Societies

DESCRIPTION

Adult Male.—General aspect above bright rufous; top of head bluish slate with rufous crown patch, which varies very greatly in size in different individuals; a series of large black patches commences under eyes and extends to back of neck; back barred with black, in some birds profusely, others very slightly; sub-terminal broad band of black on tail, followed by white tip; outer feathers of tail and sometimes others marked with black and white, showing conspicuously from below; wing, upper part bluish, more or less spotted or barred with black, long quill feathers black, inner web barred with white, showing conspicuously from underneath; under parts varying from almost white to deep buff, more or less spotted, with black on sides and belly; throat white.

Adult Female.—General appearance above rufous, very heavily barred with black; head like that of male, showing similar individual variation; wing, long quill feathers, black spotted on upper surface with rufous, but showing silvery, barred with black, from below; underneath, whitish, heavily streaked with brown, varying in shade from pale to very dark.

The variation in the pattern of plumage of the Sparrow Hawks is very remarkable, making it extremely difficult to accurately describe the species. In a large series of specimens, hardly any two birds are exactly alike in detail.

Immature.—Plumage very similar to adults, the sexes being distinguishable as soon as the young are able to fly.

Size.—Male, from end of bill to end of tail varies from 8.75 to 10.50 inches; the female is larger, varying from 9.50 to 12 inches.

Nest.—Is in a cavity of some kind; a hole in a tree, either natural or the work of some Woodpecker, and, where trees are not available, a hole in a sandstone cliff or in a clay bank.

Eggs.—Usually from three to five, which vary in color from clear white to buff or cream; spotted, blotched, marbled, or sprinkled with shades of walnut brown, chestnut, cinnamon, rufous and ochraceous in varying patterns. "Scarcely any two sets are exactly alike." (Bendire.)

Distribution.—The Sparrow Hawk is found in all parts of North America, from Great Slave Lake southward to northern South America. West of the Rocky Mountains a slightly different species is recognized, known as the Desert Sparrow Hawk (*Falco sparverius phalœna*), and in Lower California is still another species, called St. Lucas Sparrow Hawk (*Falco sparverius insularis*); however, for the purposes of this leaflet, which is issued to call attention to the economic value of the Sparrow Hawks, but one species is described. The actual difference between he three species is so very slight that only the most expert and critical ornithologist can observe it; the layman can see no difference in the plumages, and as the habits of all are the same, and all deserve protection, consideration as separate subspecies is not necessary at this time.

The Sparrow Hawk is the smallest of the North American Hawks, and is also our most beautiful species, as well as being one of the most beneficial. Its name is singularly inappropriate, as it in no way resembles a Sparrow in form or habits, nor does it eat them to any serious extent. If it could be renamed at the present time, it might very properly be called the Grasshopper Hawk, because it destroys such enormous quantities of these destructive insects. The only species that the Sparrow Hawk can be confused with is the Pigeon Hawk or the Sharp-shinned Hawk. While it is always somewhat difficult to recognize some birds while flying, or even while at rest, yet it may be done by a careful observer, and it should be done in the case of the Sparrow Hawk because of its great worth and entire lack of harmful qualities.

The large amount of chestnut color on the back and tail of both sexes of the Sparrow Hawk is a strong distinguishing mark, the Pigeon Hawk and Sharp-shinned Hawk being much darker.

Below, the Sparrow Hawk presents a much lighter effect than the two other species, which are heavily barred or streaked underneath. The length of the wings is another very marked point of difference in the Sparrow Hawks. When the Sparrow Hawk is perched with wings folded they reach nearly to the end of the tail, while the wings of the Sharp-shinned Hawk fall far short of it. The flight of these small Hawks differs quite materially, the Sparrow Hawk being much given to hovering in the open, when it will drop to

the ground with a not very rapid motion and seize its humble game of a grasshopper and fly back to a perch and eat it.

The Pigeon Hawk and Sharp-shinned Hawk make a few rapid wing-strokes and then sail for some distance. The Sparrow Hawk hunts and perches in open places, while the Sharp-shinned Hawk confines itself to the woods and thickets, perching in a tree where it may be hidden. The note of the Sparrow Hawk is '*Killee, killee, killee,*' which once heard will always serve to distinguish this species from the two others with which it may be confounded.

Another very excellent means of identification of the Sparrow Hawk, if seen at or near its nesting site, is the location of the nest; if it is in a hole of any kind it is almost sure to belong to a Sparrow Hawk, while if it is a nest built of sticks and other material in the branches of a tree it is equally sure to be the nest of a Pigeon or Sharp-shinned Hawk.

As the Pigeon Hawk is not often found breeding within the limits of the United States, the tree nest, if found south of the Canadian border, will very likely be that of the Sharp-shinned Hawk.

These several distinguishing marks are given with the earnest hope that farmers, sportsmen and others who, in the past, have killed all Hawks, will in the future spare the Sparrow Hawk, owing to its great value to agriculture. When in doubt regarding the identity of a small Hawk, give the benefit of the doubt to the Hawk, and refrain from killing it, for you may thus spare a valuable bird, belonging to a species that during every twelve months renders service to the agricultural industry of the country that is far beyond computation, but if measured in dollars and cents would reach to very high figures.

This appeal for protection of the Sparrow Hawks, and the statements as to their value, would be worthless if they could not be supported by *facts*.

In the exhaustive report on this species, made in 1893, by Dr. A. K. Fisher, of the United States Department of Agriculture, will be found indisputable facts that prove the absolute value of this Hawk as a grasshopper- and rodent-destroyer, and, on the other hand, will show how little harm it does.

Three hundred and twenty stomachs were examined, which had been collected in widely separated parts of the country, and in all seasons of the year. In only one stomach was found remains of a game-bird; (it also contained 29 insects). This fact shows that the sportsmen have no excuse for killing a Sparrow Hawk, as it certainly does not molest game-birds. Fifty-three stomachs contained remains of other birds, the species being one that lived on or very near the ground. In almost every instance the stomachs of these 53 Hawks contained, in addition, insects or rodents of some kind. Eighty-nine birds had been eating mice of some species, while 24 Hawks had been eating other mammals, reptiles or batrachians. Two hundred and fifteen birds had been eating insects of various kinds, largely grasshoppers, crickets, beetles, caterpillars, etc. A stomach of a Hawk collected at Lockport, N. Y., in August, contained 30 crickets; another, collected in Dakota county, Nebraska, in July, contained a gopher and 38 insects; another, from Cedar county, Nebraska, in August, contained 35 grasshoppers, 24 crickets, 1 dragon-fly and 2 spiders; a West Virginia bird had eaten 25 grasshoppers, 10 katydids and 10 crickets; an Alabama bird, late in November, had eaten 25 grasshoppers, 5 crickets and 2 larvæ; while another, in February, had eaten a cotton rat.

Dr. Fisher summarizes as follows: "The subject of the food of this Hawk is one of great interest, and, considered in its economic bearings, is one that should be carefully studied. The Sparrow Hawk is almost exclusively insectivorous, except when insect food is difficult to obtain. In localities where grasshoppers and crickets are abundant these Hawks congregate, often in moderate-sized flocks, and gorge themselves continuously. Rarely do they touch any other form of food until either by the advancing season or other natural causes the grasshopper crop is so lessened that their hunger cannot be appeased without undue exertion. Then other kinds of insects and other forms of life contribute to

their fare; and beetles, spiders, mice, shrews, small snakes, lizards, or even birds may be required to bring up the balance.

"In some places in the West and South telegraph poles pass for miles through treeless plains and savannas. For lack of better perches, the Sparrow Hawks often use these poles for resting places, from which they make short trips to pick up a grasshopper or mouse, which they carry back to their perch. At times, when grasshoppers are abundant, such a line of poles is pretty well occupied by these Hawks. In the vicinity of Washington, D. C., remarkable as it may appear to those who have not interested themselves specially in the matter, it is the exception not to find grasshoppers or crickets in the stomachs of the Sparrow Hawks, even when killed during the months of January and February, unless the ground is covered with snow. It is wonderful how the birds can discover the half-concealed, semi-dormant insects, which in color so closely resemble the ground or dry grass. Whether they are attracted by a slight movement, or distinguish the form of their prey as it sits motionless, is difficult to prove, but in any case the acuteness of their vision is of a character which we are unable to appreciate.

"Feeding on insects so exclusively as they do, it is to be presumed that they destroy a considerable number of beneficial kinds, as well as spiders, which they find in the same localities as the grasshoppers. However, examination of their stomach contents shows the number to be so small, compared with that of the noxious species, that it is hardly worth considering.

"In the spring, when new ground or meadow is broken by the plow, they often become very tame if not molested. They fly down, even alighting under the very horses for an instant in their endeavor to capture an unearthed mouse or insect."

Stucy Points for Teachers and Students

Where is this Hawk found? Does it remain in your locality in winter? If not found in your locality in winter, when does it arrive in the spring? When does it leave in the fall? Is it rare or abundant in your section? What harm to agriculture is done by grasshoppers? By crickets? By mice and other rodents? How can you distinguish the Sparrow Hawks from Pigeon Hawks and Sharp-shinned Hawks? Give some reasons, based on your personal observations, why the Sparrow Hawk should be protected.

For valuable information regarding the Sparrow Hawks, consult the reference books named in Leaflet No. 8, Marsh Hawk.

Additional copies of this leaflet may be procured of William Dutcher, chairman, 525 Manhattan avenue, New York city.

VOL. VI
No. 5

SEPTEMBER — OCTOBER, 1904

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Bird-Lore

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FRANK M. CHAPMAN

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R. Weber

Bird-Lore for December will contain an article by Ernest Thompson Seton on 'How to Study a Bird.'

Bird-Lore

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NOTICES TO SUBSCRIBERS

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Subscribers whose subscription expires with the present issue will find a properly dated renewal blank in their magazine. In the event of a desire not to renew, the publishers would greatly appreciate a postal to that effect.

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1. Bay-breasted Warbler, Male.
2. Bay-breasted Warbler, Female.
3. Bay-breasted Warbler, Young.
4. Chestnut-sided Warbler, Male.
5. Chestnut-sided Warbler, Female.
6. Chestnut-sided Warbler, Young.

ONE-HALF NATURAL SIZE.

Bird-Lore

A BI-MONTHLY MAGAZINE
DEVOTED TO THE STUDY AND PROTECTION OF BIRDS

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. VI SEPTEMBER — OCTOBER, 1904 No. 5

President Roosevelt and Bird Protection

BIRD-LORE does not propose to enter the political field, but effective bird protection is so dependent upon proper legislation, particularly federal legislation, that it seems desirable at this time to reprint two letters written to the Editor of this magazine by the President of the United States when he was Governor of the state of New York, and published, respectively, in our issues for April, 1899, and June, 1900. The letters follow.— ED.

My dear Mr. Chapman:

I need hardly say how heartily I sympathize with the purposes of the Audubon Society. I would like to see all harmless wild things, but especially all birds, protected in every way. I do not understand how any man or woman who really loves nature can fail to try to exert all influence in support of such objects as those of the Audubon Society.

Spring would not be spring without bird songs, any more than it would be spring without buds and flowers, and I only wish that besides protecting the songsters, the birds of the grove, the orchard, the garden and the meadow, we could also protect the birds of the seashore and of the wilderness.

The Loon ought to be, and, under wise legislation could be, a feature of every Adirondack lake; Ospreys, as every one knows, can be made the tamest of the tame, and Terns should be as plentiful along our shores as Swallows around our barns.

A Tanager or a Cardinal makes a point of glowing beauty in the green woods, and the Cardinal among the white snows.

When the Bluebirds were so nearly destroyed by the severe winter a few seasons ago, the loss was like the loss of an old friend, or at least like the burning down of a familiar and dearly loved house. How immensely it would add to our forests if only the great Logcock were still found among them!

The destruction of the Wild Pigeon and the Carolina Paroquet has meant a loss as severe as if the Catskills or the Palisades were taken away.

When I hear of the destruction of a species I feel just as if all the works of some great writer had perished; as if we had lost all instead of only part of Polybius or Livy.

Very truly yours,

THEODORE ROOSEVELT.

My dear Mr. Chapman:

* * * It was the greatest pleasure to sign the Hallock bill. Let me take this chance of writing a word to you in behalf of the work of your Society. It would be hard to overestimate the importance of its educational effects. Half, and more than half, the beauty of the woods and fields is gone when they lose the harmless wild things, while, if we could only ever get our people to the point of taking a universal and thoroughly intelligent interest in the preservation of game-birds and fish, the result would be an important addition to our food supply. Ultimately, people are sure to realize that to kill off all game-birds and net out all fish streams is not much more sensible than it would be to kill off all our milch cows and brood mares. As for the birds that are the special object of the preservation of your Society, we should keep them just as we keep trees. They add immeasurably to the wholesome beauty of life.

Faithfully yours,

(Signed) THEODORE ROOSEVELT.

SOLITARY SANDPIPER

From nature, by T. L. Hankinson. Axton, Adirondacks, N. Y., Sept. 3, 1899

A Woodcock at Home

By E. G. TABOR

With photographs from nature by the author

No. 3. WOODCOCK'S NEST AND EGGS

FOR some time it has been the desire of the writer to make photographs of the bird, nest and eggs of the American Woodcock. Consequently, when a friend wrote me that he had found a nest containing four eggs I was more than pleased, and Tuesday, May 17, 1904, found me on the ground armed with my 'Premo' and a good supply of Seed's fastest plates.

The nest was situated in a swampy corner of a field planted with corn, only six feet from the open, on a slightly raised portion of the ground. This corner was overgrown with black ash, soft maple. tag alders and ferns, mingled with poison ivy and equally poisonous mosquitoes.

Photograph No. 1 was taken with single lens, the camera standing in the field; all the others were made with the regular lens. Photograph No. 2 was taken after moving the camera so as to get a side view. Number 3, of the nest and eggs, I obtained next, but not until I had touched the bird twice with my hand to flush her off the nest; and, wishing her the best of success in her strenuous duties, I then went away from the place. Returning on Friday, May 20, just to see how matters were progressing, I was delighted to find awaiting me what you discover in photograph No. 4. I then withdrew, and two hours later I approached the nest again, only to find that all the young had left it. I tried to locate them, and, although I crawled all over the patch and looked in every nook and corner, behind and under every leaf and bush, I was unable to find the parent or the young. Quite disappointed, I went out of the place to a fence-

post and unchained 'Bob,' a liver-colored pointer, who in his eagerness to join in the search had almost whined his life away.

We went back, and, in less time than it takes to tell it, a Woodcock flushed not eighteen inches from where I had just crawled! Photograph No. 5 shows what I found there. The young birds were then about two rods from the nest, and must have remained exactly in this position for at least a half-hour, as I took the dog back to his

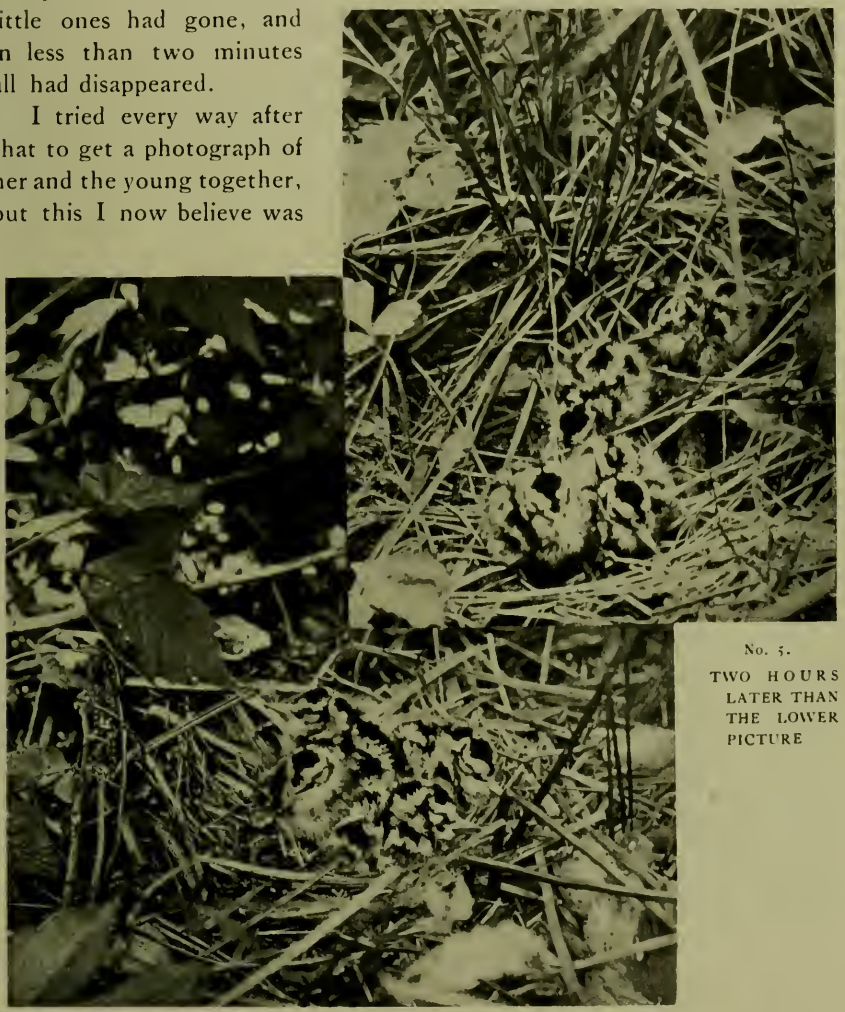
No. 2. WOODCOCK ON NEST

No. 1. FRONT VIEW OF SAME BIRD.

post, got the camera in position and took photograph No. 5 very hastily, then settled down and made two more exposures with great deliberation, so as to be sure of the matter. Afterwards I sat down, lighted a cigar

and smoked out some of the mosquitoes, listened to the cluck of the mother and a little later discovered her coming back through the tangle, never approaching near enough for a snap-shot, but all the while uttering her calls. Presently I heard a very tiny, plaintive and long-drawn-out *e-e-p*, and soon one of my little ones had gone, and in less than two minutes all had disappeared.

I tried every way after that to get a photograph of her and the young together, but this I now believe was impossible, as she would not come nearer than ten feet of them, always calling them to her, nor could I get nearer than that to them when all were together. With reluctance I abandoned the attempt and left the place, trusting that I might be able to get something at a future day.



No. 5. TWO HOURS LATER THAN THE LOWER PICTURE

No. 4. YOUNG WOODCOCK IN NEST. HATCHED PRECEDING NIGHT

On Saturday, May 28, the young now being about nine days old, I

again visited the place to see if I could discover them, being careful to take Bob with me. In about ten minutes we found them, and photograph No. 6 was taken as hastily as possible. A minute afterward they had all slipped away.

A week later, June 4, I worked the place over carefully with Bob, but failed to find a single Woodcock. Twenty rods away, however, we flushed

No. 7.
TAKEN ABOUT THIRTY SECONDS LATER THAN THE LOWER PICTURE.
The center bird skulked away half a minute later, and was almost immediately followed by the others.

No. 6. YOUNG WOODCOCK, NINE DAYS OLD
Showing the position in which left by the mother when flushed. They held this position about three minutes

an old bird from a small clump of berry bushes, but could not find any others either young or old.

The first time I flushed the old bird from the young, after they left the nest, she flew only about a rod, fell all in a heap as if wounded, and made a noise with her wings like a Ruffed Grouse when commencing to drum, at the same time uttering a sound expressed best by the word '*twut*.' This

she continued to do as long as I was near the young. She slipped around to the side and tried to attract my attention and get me away from the place where the young were; all this time they lay perfectly still, with their eyes nearly closed, as may be seen by referring to photograph No. 5. They did not stick their heads under foliage or leaves, as young Grouse do when hiding, but simply dropped flat with bill extended, as seen in the photographs. However, if one was touched or moved, as soon as freed it ran away about three feet, dropped to the ground for an instant and repeated this performance until out of sight.

At my second visit, the young lay only until all was quiet, then rose up and skulked away; the old bird did not *twut* except just as she flew up, but simply feigned injury at first and then sneaked to cover.

October Bird Music

By EARLE STAFFORD

OCTOBER, as regards the birds, may be justly termed an unmusical month. Not only have most of the songsters departed, but very few of the remaining ones favor us with their voices. Even at this time, however, when the first frosts whiten the meadows at sunrise, and the oak woods are in dull splendor, snatches of welcome melody may be heard to cheer the heart.

There is no bird, I believe, that is utterly silent during the month. The call-notes are necessary means of communication, throughout any season, but the song—that expression of an emotion not fully understood—is seldom heard from many of the birds, either residents or migrants. The Hermit Thrush, silent, dignified, passes through with scarce a word. He mounts from the dry leaves of a thicket to a swaying branch, and quietly observes us, perhaps giving a low *chuck*, as an indication of his annoyance. How different, too, the familiar Song Sparrow now skulking shyly among the weeds, from the same merry herald of spring! The season has affected his character, and when he does occasionally rise from his retreat and give his familiar ditty, or, as a substitute, a prolonged warble, it appears to be for his own consolation rather than for the pleasure of the world. The jolly Tree Sparrows arriving in the middle of the month are of a different mood; the drifting leaves and the biting north wind cause them no sorrow, while the fields and gardens are bountiful with a rich repast. No wonder October is a month of Finches. In company with the Tree Sparrows are Juncos, White-throats and Song Sparrows, and they spend the clear days among the thicket and goldenrod patches, busy with the multitude of seeds which nature has spread for them. The Tree Sparrows have a social jingling

twitter, remarkably pleasing, and suggestive of winter days, and not infrequently a White-throat will join the chorus with his silvery tremolo, given in a tenderness not suggested by the clear, brave whistle of summer. His common note, though, is a sharp *tsee-ep*, not unlike the call of the Brown Creeper.

The month is mainly one of concert music. In the swamps the Rusty Blackbirds carry on a pleasant bubbling undercurrent of quaint melody, which always brings to my mind a squeaky wheelbarrow pushed along by the edge of a noisy brook. With them are lingering Redwings, who rarely utter their rich songs; it is remarkable how many pleasant memories this simple phrase will recall. Goldfinches in large parties ripple among the asters. They have a perpetual overflow of sweet notes, which, heard from half a hundred, is wonderfully effective. The Purple Finch alights on a savin top to drop several rich, sweet measures, and then is off again till his flinty *tip* is lost in the distance.

If the year is one when the country is invaded by northern birds, the plaintive whistles of Pine Grosbeaks, and the *kimp* notes of Crossbills will be constantly falling from overhead, or mingling with the calls of Chickadees and Kinglets among the spruces, where the birds are busy with the evergreen seeds. The fresh 'phœbe' call of the Chickadee is a heart-warming bit of song, which I think may be heard every month in the year.

A not infrequent and thoroughly enjoyable surprise is to hear the song of the Ruby-crowned Kinglet during the month. It is not nearly so perfect as in spring; indeed the little fellow seems never to reach the beautiful climax of his song. He starts with all his vigorous preliminary chattering, gets to perfection his purring ripples, but, sadly, seems incapable of giving the final *hert-her-wee* notes. I have heard but one Kinglet who omitted this valuable addition in the spring. Certainly his musical education had been shamefully neglected.

But the most wonderful singer of the month is the Fox Sparrow. Ordinarily, he may be said to be silent in fall, except for his call-notes, but when there is a large migration of the handsome birds we may often enjoy the thrill of their clear, mellow, sadly sweet songs from the midst of some bare thicket.

King Cole: A Biography

By SUSAN M. MORSE

KING COLE was only a common Crow, but a bird of such sagacity that I feel a true account of him and his doings would be interesting in these pages. He was a Canadian by birth and was brought home in a big boy's cap, one holiday afternoon, to his three sisters — I being one of them. Our brother had found the little fellow entangled in a pile of dead brushwood, where he had probably been deserted by his family.

Our big brother advised a worm diet for our charge, so we selected a corner behind the barn, where the mould was soft and rich and abounded in worms, and King Cole very soon learned to know the spot. He had the oddest way of going to the place. Wherever he happened to be at the time, whether near or far, he would start up quite suddenly, alert, as if struck with the idea of being hungry. Recovering himself quickly, off he would fly scolding and screaming at the top of his voice for some one to come and turn up the worms for him. As he grew older he was able to forage for himself, but he always did so distinctly under protest. He much preferred having the worms unearthed for him, and would sit on a rail near by and scream himself hoarse in order to attract our attention. If one of us did not soon appear, he would stalk around the corner to look for us. If no one was in sight (to tease him, we would often hide), back he would flounce, scolding all the time, and set to work himself with an air of deep disgust, as though he thought himself very hardly used. If one of us arrived at this stage of the proceedings, he would fly to us, flapping his wings and snapping his beak in a passion, and by muttering, croaking and screaming express his entire disapproval of our treatment of him. On our taking up the spade, his protest would subside into little mollified grunts and caws of anticipation. This change in his voice was almost articulate, and most expressive. He would watch eagerly for the worms, skipping warily around the spade to avoid the earth, and when he saw one would pounce upon it, gobbling and screaming at the same time, making the most outrageous noise imaginable.

In a few weeks King Cole was a full-grown Crow and as large and glossy a one as you could wish to see. To keep him at home we were obliged to clip his wings, and it was only when his feathers grew again and we neglected clipping them afresh that he began those flights abroad that got him in such bad repute among the neighbors. King Cole's tricks were without number — his mischief endless — his curiosity boundless. A tied-up paper parcel was a prize he dearly loved to come upon. He would deftly untie the string with his beak and strip off the wrappings in less than no time, and his peepings and peerings at the contents were a caution to see. Anything with a cover into which he could not pry was pain and grief to him. I have watched him sit for an hour on the top of a covered tobacco

jar, hardly big enough to hold him, and run his beak around the crack of the lid, vainly trying to open it.

The trick I found the hardest to forgive him was the destruction of some of my house plants. With great pains I had constructed a flower-stand I had seen described in some magazine, the basis of the affair being, I think, an old wash-stand and a couple of tin basins. It was fearfully and wonderfully made and I was vastly proud of it. Fancy my feelings when I came in one day and found everything a complete wreck, and King Cole seated on the top of all, surveying his work of destruction and talking softly to himself with an air of complete satisfaction. He had pulled up every geranium plant, stripped off all the leaves, and had laid the stalks in regular rows on the window-sill. The little yellow blossoms of a trailing plant were scattered far and wide about the room, some even on the mantel and the book-shelves, so that he must have carried them in his beak and laid them there; not a single blossom was left on the plant, and it had been very full of bloom. When the villain saw me, he gave a scream of fright and, scrambling out of the debris, flew out of the window and away, and did not return for several days.

We owned a clever little rat-terrier called 'Nettle,' at that time, but, compared with the wisdom of King Cole, Nettle's sagacity sank into insignificance. To tease her and a melancholy old cat who was then ten, and who lived to be seventeen years old, whom we called 'Mawther Gummidge,' was King Cole's greatest delight. He always went to work in precisely the same way. He would waylay Mawther, and, ambling gravely after her, nip her daintily on the joint of one of her hind legs. Mawther had learned to protect her caudal appendage from these rear attacks, so he was forced to open hostilities upon her leg. She was usually too deeply sunk in apathy to take to her heels at once and put herself beyond his reach, but would turn upon him with a look of deep reproach, whereupon he would rush violently at her nose. To protect that weather-beaten feature, poor Mawther would quickly turn about again, and so would catch it once more on the leg, only this time the tweak would be a hard one. This had the effect of rousing her meek spirit, and a very one-sided combat would follow, Puss getting much the worst of the battle. After putting her to rout, King Cole would fly upon the window-sill and mock his retiring foe by as good an imitation of her 'meows' as he was able to give. In time he became a very fair mimic; he could 'cluck' like a hen, gabble and hiss like geese, and if several people were talking together in his hearing he would retire to another room and there imitate them by uttering a succession of guttural sounds in different notes precisely like the voices of two or more persons conversing in low tones.

Nettle and King Cole were the best of friends, and, when the Crow was not in his mischievous mood, they would play together by the hour. Nettle bore his teasing more good-naturedly than did the misanthropic Mawther,

but was often obliged to defend herself, nevertheless. The little dog might often be seen running about with the Crow balanced cleverly on her back. She would carry him in this way all over the farm. Sometimes her little curled-over tail with a tempting tuft of hair at the end would prove too much for King Cole, and the ungrateful rascal would stretch out his head and slyly tweak it. To dislodge him Nettle would promptly roll over, but

YOUNG CROW
From nature, by E. G. Tabor

was no sooner on her feet again than the Crow would be in his place and ready for another tweak. I suppose I have seen this absurd performance repeated a dozen times before Nettle could make her escape.

The Crow was a most incorrigible thief, and made way with any number of trinkets, etc., during his lifetime, many of which we never found. Like the Magpie, which I believe is a first cousin to the Crow, he would steal, and hide in all sorts of places, any bright-colored or sparkling thing that took

his fancy. Sometimes he would bury his finds, at other times drop them down a crack, chink or knot-hole in the floor—anywhere, in fact, where he could frequently go and peep at them, always doing so with the greatest air of secrecy. I remember the first collection we came across. We were playing one day near a pile of wood, when Nettle, who was basking in the sun and playing idly with the Crow, suddenly jumped up and began sniffing near where two projecting logs next the side of the outhouse made a dark little corner. As soon as King Cole noticed this he flew into the greatest state of excitement; he flounced on the dog's back, scolding and screaming, and tried to drive her away. Finding violence of no avail, he tried coaxing. Sprawling on the ground before her, he stuck one leg awkwardly out, in a manner which usually proved irresistible to Nettle, to tempt her to a frolic. However, even this failed to draw her off the scent, and she went on sniffing until she ran her head quite under the ends of the logs. King Cole now evidently gave up all for lost, for, with the light of a desperate resolve gleaming in his eye, he bundled himself, with screams of rage, between the dog's feet, into where her shoulders could not pass. Scratching and burrowing with his beak, he unearthed presently a collection of crusts of bread, bones, bits of glass bottles, scraps of scarlet cloth, buttons, a broken knife-blade, and any number of pieces of buckwheat cakes. Determined that Nettle should not profit by her find, he fell upon the scraps of food and gobbled them up so fast that he very nearly choked himself to death. When Nettle was gotten away, there stood King Cole with a bit of griddle-cake crosswise in his beak, gasping for breath,—the very personification of selfish greed. Before night he had carried off all his treasures and hidden them afresh.

One day Meg was sitting at the open window sewing some buttons on her boots. She put her thimble down for a moment, and King Cole, who had been sitting on the low branch of a tree near by and crooning in an absent-minded sort of way to himself, suddenly dropped from his perch and pounced upon the thimble. He then flew to the ground with it, where he stood jabbering away, and looking saucily at Meg, first with one eye and then with the other. Out of consideration for my sister's stockinged feet, I ran to get the thimble. Just as I put my hand out for it, off he flew with it again—this time to the garden palings, where he laid it carelessly on the top of a post, and turned to gaze abstractedly across the field as if he had dismissed all thoughts of the thimble from his wicked little mind. He even sidled some distance away from the post, so that I was quite deceived into thinking he meant to give it up. Not a bit of it! The moment my hand went out for it, like a flash of lightning he snatched it up and was off with it again. This was too much for my sister at the window. "Oh, you stupid!" she cried, an sallied forth, bootless, but full of confidence in her own powers. I can laugh, to this day, when I think of that chase! Before it ended, poor

Meg's temper and her stockings were of about the same hue — decidedly black. He led her over acres of land, through a plowed field of soft, black soil, into which she plunged, regardless of her white stockings. Then on through an oat stubble, where poor Meg fairly danced in agony; over any number of snake-fences with blackberry hedges on either side, not to speak of the various stone piles he selected as his stopping places. At each attempt to get the thimble from him, the little rascal allowed her to all but close her hand upon it. Never once did he snap it up until the very last moment.

After a while, she, learning something from the tactics of her enemy, changed hers, and tried the plan of knocking him away from the thimble with a long fence-rail; but he invariably got to it first, no matter how quickly she dropped the rail, and made a dash for the thimble. Next she tried the ruse of walking past him with studied unconcern, and returning with a rush. She even went so far as to pretend to go to sleep, her head a yard from the disputed property, and her hand ready for the clutch — but for each and all of her manœuvers he was fully prepared, and it seemed to me, who watched proceedings from a distance, that the victory was to be with the little black Crow, who did look such a tiny creature beside my tall sister of twelve years of age. You will never guess how it ended! King Cole's manner of surrender was worthy of him. After leading poor exasperated Meg nearly back to the house again, he flew to the branch of a tree, the thimble held in the tip of his beak, and sat there eyeing her as she stood below, impotently threatening and hurling sticks and stones at him. Presently he tilted deliberately forward and dropped the thimble at her feet, sat up very straight, cocked his head on one side and muttered soothingly, saying as plainly as Crow could: "There, little girl, there's your thimble; I am done with it."

One of the Crow's favorite tricks, and his funniest, was to drop suddenly into a flock of strange fowls, whenever he came across any in the fields or barn-yards about (our own hens and he were the best of friends) and when, in a fright, they would disperse, he would affect to start and look about him, as much as to say "Dear me! how is it I find myself alone?" I have watched him do this many times, and the little by-play was always the same, and most amusing.

The terror of his life were his wild kinsmen, who soon found him out in his adopted home. They cordially hated him, and when they managed to catch him far from home without a protector would attack him savagely. More than once the men working in the fields saved him only just in time from being picked to death. Sometimes as many as four or five wild Crows would pursue him, clamoring loudly, almost to the house door, or to within a few yards of us if we were in the fields. I think, when one considers the

extremely wild nature of the common Crow, this is very remarkable. I remember once sitting at an open window, and hearing the peculiar cry King Cole always gave when frightened. He presently swooped in at the window with a wild Crow in full chase — who actually only turned back when I sprang up and waved my hands — positively 'shooing' him away. I was as badly frightened as King Cole, who meanwhile lost no time in scrambling beneath the sofa — for the stranger was a big, fierce fellow with glittering black eyes, and was snapping his great beak furiously.

When he finally beat a retreat, it was only to a tree not more than twenty feet from the house, where he stayed for some time, watching the window and clamoring angrily.

King Cole was very fond of going with us into the woods or fields to gather berries, and the way he would keep his weather eye open for his enemies was a caution. If he sighted one, in the distance, or heard a 'caw' overhead, he would come scrambling to us and creep under our pinafores, with little crooning utterances. From this safe retreat, he would poke his head cautiously out to rake the sky, first with one eye and then with the other, in search of his foes.

I remember a very funny thing that happened one day. We were gathering strawberries, and there was an old woman some distance from us picking away industriously — her wide-brimmed straw hat covering her shoulders. A bird's-eye view must have shown little else than hat, I fancy. I don't know what King Cole thought it was, but he dropped straight upon it with a couple of ear-piercing 'caws,' and over the old body went with a smothered howl of terror. Afraid to move, she lay stiffly with her feet half way up the side of a little knoll, her hands before her eyes fearing to behold the monster from the sky. We ran to help her up, explaining, and, when we got her on her feet, found she had fallen on her basket of berries, and her light-colored calico dress was stained with their juice, from her head to her heels, a sight to behold! We looked about for the author of the mischief, and there he was! Snuggled beneath the hat as quiet as a mouse, hoping, no doubt, to hide until the trouble blew over. We got the worst of it in the end, however, and were obliged to beat a hasty retreat, with King Cole wrapped up in Meg's apron to save him from the wrath of the assaulted one, who gave us a very plain piece of her mind about keeping "sich creeters araound"!

Before long, we began to hear a great many complaints of our pet. One neighbor declared he had come in her window one morning and flown off with her tooth-brush; another, that she had found him in her kitchen with his legs embedded in a batch of bread-dough, which she had put to rise by the fire. Had she not been a tender-hearted soul, he would have met his death then and there. However, it was not long after this that he disappeared, and, though we looked and inquired everywhere, it

was a long time before we learned the cause and manner of his taking off. At last a friend confessed to us that a neighbor of hers who had suffered many a time from the raids of King Cole upon her chicken-yard, one day found him beneath the high valanced bed in her room worrying a little chicken he had driven in from the yard. The woman declared that her patience then and there came to an end, and so she summoned her husband to the scene. He brought his gun and put an end to our poor King Cole's life.

ROCKY MOUNTAIN JAY

From nature, by Evan Lewis, at Idaho Springs, Colo.

For Teachers and Students

The Migration of Warblers

SIXTH PAPER

Compiled by Professor W. W. Cooke, Chiefly from Data in the Biological Survey

With drawings by Louis Agassiz Fuertes and Bruce Horsfall

BAY-BREASTED WARBLER

SPRING MIGRATION

PLACE	No. of years' record	Average date of spring arrival	Earliest date of spring arrival
Atlantic Coast—			
Chester County, S. C.			May 5, 1888
Washington, D. C.	3	May 13	May 9, 1903
Renovo, Pa.	6	May 13	May 11, 1897
Southeastern New York	5	May 8	May 3, 1899
Central Massachusetts	9	May 16	May 8, 1895
Southern Maine	6	May 18	
St. John, N. B.	6	May 21	May 15, 1889
Montreal, Can.	3	May 23	May 19, 1891
Picton, N. S.			May 23, 1895
Mississippi Valley—			
St. Louis, Mo.	4	May 7	May 3, 1883
Morgan Park, Ill.	5	May 5	May 2, 1900
Brookville, Ind.	3	May 8	May 2, 1884
Petersburg, Mich.	6	May 13	May 10, 1893
Southern Ontario	10	May 12	May 6, 1889
Ottawa, Ont.	14	May 17	May 11, 1886
Aweme, Man.	3	May 16	May 13, 1899

FALL MIGRATION

PLACE	No. of years' record	Average date of last one seen	Latest date of last one seen
Ottawa, Ont.	3	September 8	September 16, 1888
St. John, N. B.			September 1, 1890
Glen Ellyn, Ill.	7	September 18	October 4, 1897
Germantown, Pa.	3	September 28	October 19, 1885

CHESTNUT-SIDED WARBLER

SPRING MIGRATION

PLACE	No. of years' record	Average date of spring arrival	Earliest date of spring arrival
Atlantic Coast —			
Suwanee River, Fla.			April 10, 1892
Atlanta, Ga. (near)	8	April 28	April 17, 1896
Asheville, N. C. (near)	3	April 26	April 22, 1902
Raleigh, N. C.	2	April 28	April 27, 1886
French Creek, W. Va.	5	May 2	April 30, 1890
Washington, D. C.	4	May 3	April 30, 1891
Beaver, Pa.	5	May 2	May 1, 1902
Renovo, Pa.	9	May 3	April 30, 1901
Southeastern New York	14	May 6	May 2, 1899
Portland, Conn.	6	May 7	May 4, 1887
Boston, Mass.	14	May 6	May 2, 1897
Lewiston, Me.	8	May 12	May 7, 1899
Montreal, Can.	6	May 17	May 11, 1889
Scotch Lake, N. B.	6	May 23	May 18, 1897
Halifax, N. S.			May 24, 1895
Mississippi Valley —			
Southern Texas	3	April 20	April 17, 1890
Shell Mound, Miss.			April 15, 1892
St. Louis, Mo.	6	May 3	April 27, 1883
Brookville, Ind.	4	May 4	May 2, 1881
Chicago, Ill.	6	May 6	May 2, 1896
Petersburg, Mich.	10	May 6	April 28, 1889
Listowel, Ont.	11	May 6	May 2, 1900
Parry Sound District, Ont.	12	May 11	May 8, 1889
Ottawa, Ont.	16	May 14	May 8, 1895
Grinnell, Ia.	5	May 5	May 1, 1887
Lanesboro, Minn.	9	May 9	May 4, 1890
Elk River, Minn.	7	May 14	May 7, 1887
Aweme, Man.	3	May 20	May 18, 1897

FALL MIGRATION

PLACE	No. of years' record	Average date of last one seen	Latest date of last one seen
Lanesboro, Minn.	4	September 8	September 15, 1889
Ottawa, Ont.	5	August 23	September 12, 1885
Glen Ellyn, Ill.	6	September 19	September 26, 1895
St. John, N. B.			September 10, 1895
Beaver, Pa.	4	September 23	October 1, 1890
Berwyn, Pa.			October 8, 1891
New Orleans, La.			October 10, 1896

DISTRIBUTION OF SONG SPARROWS

Photographed from an exhibit in the American Museum of Natural History. Published by permission from the American Museum Journal

Climatic Variation in Color and Size of Song Sparrows

By FRANK M. CHAPMAN

THE American Museum of Natural History has lately placed on view the first exhibit of several designed to illustrate variation in the color and size of birds due to climatic agencies. It includes the leading types of Song Sparrows, a species which is particularly susceptible to the influences of its environment, no less than twenty climatic varieties, geographical races, or subspecies of this wide-ranging bird being known.

East of the Rocky Mountains, in a region where climatic conditions are quite uniform, only one well-marked subspecies of Song Sparrow is found ;

but west of the Rocky Mountains, where there are widely varying climatic conditions, sixteen subspecies of Song Sparrow are known, twelve of them from California alone.

There is a striking relation between the colors of the various races and the aridity and the humidity of the areas they inhabit. Thus the palest-colored race, the Desert Song Sparrow (No. 5, on the accompanying illustration), *Melospiza cinerea fallax* inhabits the most arid portion of North America, the desert region of Nevada, Arizona and southeastern California, where the annual rainfall averages about six inches; while the darkest-colored race, the Sooty Song Sparrow (No. 2, *Melospiza cinerea rufina*), inhabits the most humid portion of North America, the coast region of British Columbia and southern Alaska, where the annual rainfall may reach one hundred and twenty-five inches.

Note that, in obedience to the law that animals increase in size toward the north, the largest race, the Aleutian Song Sparrow (No. 1, *Melospiza cinerea cinerea*), is the most northern, and, the smallest race, the Mexican Song Sparrow (No. 6, *Melospiza cinerea mexicana*), is the most southern.

Between the lightest and the darkest, the smallest and the largest Song Sparrows, however, there is complete intergradation in accordance with the change in the conditions which affect their color and size.

NIGHTHAWK ON NEST

From nature, by J. E. Seebold, Carlisle, Pa.

Notes from Field and Study

A Station for the Study of Bird Life

Articles of Incorporation have just been drawn looking to the establishment, on a permanent foundation, of the "Worthington Society for the Investigation of Bird Life." The founder, Mr. Charles C. Worthington, will erect and endow, on his estate at Shawnee, Monroe County, Pennsylvania, the necessary buildings and equipment.

The Worthington Society will have for its purpose the consideration of bird life as it is found in nature, and will also have many birds under confinement for study and experiment.

The following is a summary of the chief topics that will present an immediate field for experimentation, which it is proposed by the liberality of the foundation to make continuous and exhaustive in the hope of reaching conclusive results.

I. The study and consideration of a bird as an individual. It is believed that by means of observation carried through the entire life of the individual, with a daily record, brief or elaborate, as exigencies may require, much will be learned regarding matters that are now obscure. Facts, such as growth, habits, health, temper, etc., will be daily reported.

II. The study of the occurrence, extent, nature and cause of variations in different representatives of the same species.

III. Changes in color and appearance correlating with age, sex and season.

IV. Changes in color and appearance due to light, heat, presence or absence of moisture, and to food. How rapid a change in appearance can be effected by a new environment or a new set of conditions?

V. Heredity. What general characteristics are transmitted? Are acquired characteristics transmitted? The consideration of atavism, prepotency and telegony.

VI. Experiments in breeding. Hybridity and the fertility of hybrids. The possibility of establishing a new physiological species.

VII. Experiments in change of color due to moult.

VIII. Adaptability. The plasticity of animals. How great a factor is this in domesticating new kinds of animals?

IX. The leisure of animals. How is this acquired? Being acquired, how is this employed?

X. Instinct, habit, and the development of intelligence.

XI. The possibility of breeding insectivorous and other beneficial kinds of birds, to re-stock a given region or to increase native birds, as has been done in the case of fish, by the United States Fish Commission.

A temporary laboratory and aviary is being equipped, and preliminary work will begin with the instalment of a large number of native and foreign birds early in September. Mr. Worthington has procured the services of Mr. William E. D. Scott, Curator of the Department of Ornithology at Princeton University, as Director of the proposed work. Mr. Bruce Horsfall has been engaged as chief assistant and artist. The corps of assistants and workers will be increased as the plans of the Worthington Society develop.

Our 'Bobs'

A few years since, on a Louisiana sugar plantation, a Mockingbird, about a week old, in some way fell from its nest, and would have been a prey for cats had not a bird-lover who had been paying daily visits to the nest found the little fellow who had met with the accident. The bird was brought into the house, and was at once installed as a member of the family, and treated to all the care and attention one would give a baby. A nest was made in the cage, and the young mocker was fed on bread and milk. He soon learned his meal hours, and would *peep* most lustily for some of his admirers to come and take him out of

his cage and feed him. Then he would be put back and go to sleep.

When he was three weeks old his diet was changed to worms and flies. Soon he was able to make exertions to pick up his food, and when he had secured a fly or other morsel, he would give a joyous little note of triumph, as much as to say, "See what I can do!" As he grew older, one of his peculiarities was that while he liked to run and hop all over you, you must not touch him, for, if you did, he would fly to an empty chair, to the railing, or to some other perch, and then scold you for your presumption. His master taught 'Bobs,' as the bird was called, a peculiar note which the master gave whenever he came about the house. Bobs was still only a learner in flight, however, and he ventured no very great distances. He would go down into the garden in pursuit of his food. The door of his cage was left open and he went in and out as he pleased.

The big birds were very jealous of this little fellow, and he, in a spirit of defiance, would go out and dare them, whereupon they would come after him. But Bobs knew that there was always safety to be had in retreat to the house and in shrieking as loudly as possible so as to attract the attention of some one of the household, and thus bring a protector to his assistance.

The house was surrounded by magnificent oaks. Bobs was given his first lessons in flight in the trees nearest the house. As he became more venturesome, he made longer flights of his own accord, but never passed the house without giving his peculiar call. It was also his habit to come to the porch about five o'clock in the afternoon, when the family were sitting there. Then the fun began for him. He would pick at the shoestrings and struggle with them, pull out hairpins, or walk over the book one was reading if no notice was taken of him.

Poor little Bobs had many enemies of his own kind, for Mockingbirds are known to be great fighters, and jealous of human interference as well, always trying to kill domesticated birds. One day when he was several months old he went away as usual, giving his signal as he passed the house, but he never returned, much to the great grief of his friends and admirers. His rescuer went out among the trees in search of the missing pet, calling the bird by name, so well known to the little fellow, and giving the peculiar whistle also, to either of which Bobs had answered readily before. But now there was no response. Either the odds had been too great for him, or he had found a congenial mate and had gone back to the life of the birds.—Anita Pring, New Orleans, La.

Purple Martins in Vermont

In the October, 1903, number of Bird-Lore, I wrote of the disaster our Purple Martins had met with during the long, cold rain in June, in the loss of all their young. At that time we asked ourselves, "Will the Martins return next spring and take up their abode in the Castle again?" The question has been answered by a few Martins that came to the Castle this spring. Three males came April 25, and lingered about the house, apparently waiting for the arrival of females. About May 1, one female came, but the males could not induce her to remain but a few hours. Once after that she came to the house for a short interval. She seemed to see the scenes of last year's horror, and after uttering a few pitious cries she flew away.

The three males remained several days calling and looking for mates to come, but in vain. May 15, the Castle was silent, and no Martins have come to stay with us this year. We regret to think that our large Colony has gone, and there is no hope of getting them back this year; but we trust we may be more fortunate another year.

Through Bird-Lore we wish to ask the persons who reported the loss of their Martins during last year's long, cold rain, if the birds returned this spring, and are breeding in the same houses?—Frances B. Horton, *Brattleboro, Vt.*

Bird Notes from the Vicinity of New York City, 1904

Central Park.—April 30 and 31. Green-crested Flycatcher; May 1 and 8, Fish Crow; May 6 and 13, Lincoln's Sparrow—observed continually for more than an hour

and a half, at times at a distance of less than ten feet; May 6, 7 and 14, Golden-winged Warbler; May 10, 14, 15 and 21, Nashville Warbler,—heard singing on the first two occasions; May 10, 14 and 15, Bay-breasted Warbler; May 10, Mourning Dove; May 10 and 14, Gray-cheeked Thrush; May 13, Red-headed Woodpecker, Yellow-bellied Flycatcher, White-crowned Sparrow; May 28, Mourning Warbler.

Near Leonia, N. J.—April 17, Pigeon Hawk, Duck Hawk, American Pipit; August 21, Sora Rail.

Near Grantwood, N. J.—May 15, Yellow-bellied Flycatcher; July 10, Tufted Titmouse.

Near Englewood, N. J. (Woodland avenue and Mountain road).—July 10, Kentucky Warbler, Carolina Wren.

Bronx Park.—June 8, Cooper's Hawk; June 10, Broad-winged Hawk, Lawrence's Warbler. (See this volume of BIRD-LORE, p. 131.)

Coney Island (Manhattan Beach).—June 19 and 23, Least Bittern.

Long Beach, L. I.—July 24, Long-billed Curlew. Two Long-billed Curlews flew by me at a distance of about forty feet and at an altitude of about fifteen feet. When I first saw them they were flying directly toward me, but my presence caused them to swerve slightly from the original line of their flight. The weather at the time was very stormy—very heavy rain accompanied by a violent southeast wind; July 31, Rough-winged Swallow, Herring Gull.—ISAAC BILDERSEE, *New York City.*

Another Tame Vireo

In 'Notes from Field and Study' of August BIRD-LORE, I noticed Mr. S. C. Palmer's account of Tame Vireos. One day last summer I saw a young Red-eyed Vireo sitting on the edge of its nest, about ten feet from the ground. Touching the tree with my hand, the young bird fluttered down to the earth. At that moment the mother-bird returned with food. Wishing to test her courage, I sat down on the ground with my legs apart, and placed the young one between. After flying around a few times, the female perched on my shoe and fed the young bird; and afterwards she perched on my leg, just below the knee. I have no doubt that she would, in time, have fed her offspring if I had put him in my hand. But after she had fed him from my leg, I put the young one on a branch, and left him to his mother's care, as both were frightened.—C. L. BARNWELL, *Bar Harbor, Maine.*

A Pair of Wood Pewees

Mr. Henry Hales' interesting account of the intelligence of a pair of Cliff Swallows in the construction of their nest, recalls to my mind an incident which came under my observation, showing not only considerable apparent reasoning power in birds, but much paternal devotion as well.

In the heated summer of 1901, a pair of Wood Pewees built their nest near the end of a limb of an oak tree in our lawn. The nest happened to be so situated that for about two hours of the hottest portion of the day the sun shone directly upon it. During those hours, one of the birds—my wife said of course it was the mother, and I presume she was right—was always found above the nest with wings extended, so as to shade the little ones from the sun. The sun was usually so intense that we almost always found the bird with open mouth panting in the sun. The punishment must have been very severe, and the sacrifice made by the bird would have done honor to a mother of the human race. But the special point is, the action of the bird could not have been prompted by instinct, as I have never seen or heard of a similar instance with birds. The bird must have reasoned that the heat of the direct rays of the sun would destroy her young, and she took that means to preserve them. In the words of Mr. Hales, "It seems to me to be a case for which an unreasoning instinct does not sufficiently account."—G. M. ALVES, *Henderson, Ky.*

[The action noted by our correspondent is probably not uncommon. Herrick's admirable 'Home-Life of Birds' contains photographs of three species shading their young with half-spread wings.—ED.]

Book News and Reviews

Reports of the Princeton University Expeditions to Patagonia, 1896–1899. Vol II. Ornithology, Part I. Rheidæ–Spheniscidæ. By William Earl Dodge Scott, associated with R. Bowdler Sharpe. 4to, pages 1–112, numerous text cuts.

This handsome work, when completed, will evidently be an exhaustive treatise on the ornithology of the region to which it relates. With each species there is given a full synonymy, detailed description of plumage, one or more pen-and-ink drawings, usually of the head; a statement of its geographical range, list of specimens secured by the expedition, discussion of relationships, and remarks on habits. It is to be hoped that the succeeding parts will appear without undue delay. The absence of a prefatory note, descriptive of the labors and personnel of the expedition, of the area covered and extent of collections secured is to be regretted. Possibly this will be supplied later.—F. M. C.

A Monograph of Marcus Island. By Wm. Alanson Bryan. Occasional Papers, Bernice Pauahi, Bishop Museum, II, 1, 1903, pages 77–139; Birds, pages 95–116; map and half-tones. Honolulu, 1903.

Marcus Island is a small coral islet some 2,400 miles from Honolulu and 1,200 miles southeast of Yokohama. Mr. Bryan reached it July 30, 1902, and passed a week in the study of its formation and life. Eighteen species of birds, all sea-birds, most of which were breeding, were found. Several species of Terns were exceedingly abundant and a small colony of Japanese has settled on the island, to secure skins of these birds for millinery purposes. Of the Sooty Tern alone, Mr. Bryan tells us, "not less than 50,000 birds" are slaughtered during the six months from March to September. Fortunately, since his visit, the island has become an American possession and the birds, thanks to the efforts of the Chairman of our National Committee, will receive much needed protection. Surely all bird-lovers should be expansionists!

Mr. Bryan's description gives us a clear idea of the character of the island, while his graphic notes on its bird-life not only make capital reading but add not a little to our knowledge of the species treated.—F. M. C.

Papers from the Hopkins–Stanford Galapagos Expedition, 1898–1899. XVI. Birds. By Robert Evans Snodgrass and Edmund Heller. 8vo, pages 231–372.

In this admirable book, also, we miss an introduction which would inform us of the conditions under which the authors worked, actual time devoted to collecting, islands explored, etc. For the work itself we have only the highest praise. None of the many naturalists who have visited this faunally remarkable group of islands appears to have made so close a study of its bird-life as the present authors. With a biological training which prepared them to appreciate the significance of the many facts in distribution and habits which came under their observation, their notes are of the highest importance to the student of the relationships of Galapagos birds, as well as to the general subject of evolution by environment.—F. M. C.

The Birds of New Hampshire. By Glover Morrill Allen. Proc. Manchester Inst. of Arts and Sciences. IV. 1902. 8vo, pages 19–222.

Birds of the Huachuca Mountains, Arizona. By Harry S. Swarth. Pacific Coast Avifauna No. 4, Cooper Orn. Club, Los Angeles, Calif. 1904. Royal 8vo, pages 1–70.

The Birds of Erie and Presque Isle, Erie County, Pennsylvania. By W. E. Clyde Todd. Annals Carnegie Museum, II. 1904. Pages 481–596, 1 map, 3 half-tones

Here are three authoritative faunal lists which will doubtless long remain the stand-

ard publications on the birds of their respective regions. Mr. Swarth's list is based largely on observations made by himself between April 25 and July 20, 1896; March 29 and September 5, 1902, and February 17 and May 30, 1903. His list of 195 species he believes to represent fairly the resident and summer resident birds, and thinks that further field work would add some migrants and an occasional straggler. It contains no less than eleven of our seventeen Humming-birds. His annotations are often extended, a page or more frequently being devoted to a single species

Mr. Allen summarizes our knowledge of the distributional status of Vermont birds. He lists 283 species as having been positively ascertained to occur in the state, and in this connection comments on the necessity for care in identification, saying, "The trained naturalist, who appreciates at what pains facts are determined, is content to leave unrecorded that of which he is in doubt. Of much greater value is it to establish one new fact in the life-history of a common bird than to record the accidental presence of a species far from its normal range," a remark which should be taken to heart by every student of birds with an opera-glass. Mr. Allen, in addition to an exceptionally well-annotated list, presents an interesting historical introduction, a copious bibliography, and, what is too often lacking from local lists, an index. It is satisfactory to observe that the author has followed the A. O. U. 'Check-List' in nomenclature and classification rather than the inconvenient system employed in 'The Birds of Massachusetts,' of which he was joint author.

Mr. Todd also gives us a paper containing all the information available concerning the bird-life of the area under consideration. He enumerates 237 species, with extended annotations, a descriptive introduction and bibliography. The reviewer notes with surprise that the Dickcissel is admitted to the list on the authority of only a single observer. While visiting the late George B. Sennett at Erie during the last of May and first of June, 1890, he observed at least six individuals of this species which were evidently breeding near the city.—F. M. C.

Baby Pathfinder to the Birds. By Harriet E. Richards and Emma G. Cummings. W. A. Butterfield, Boston. 1904. Oblong, 64mo. 1–125 pages, numerous outline cuts in text.

This pocket booklet treats of 110 common eastern birds, giving with each one a description of plumage, characteristic habits, notes, nesting site and breeding range. At least one species of each family is figured. Every other page is blank and is designed for field memoranda, a fact which, in connection with the book's small size, should commend its use as a field book where more bulky volumes would be out of place.

Both authors have had extended experience in studying birds through an opera-glass, and are, therefore, specially fitted to administer to those who would name birds in nature.—F. M. C.

Our Birds and their Nestlings. By Margaret Coulson Walker. American Book Company. 12mo. 1–208 pages, 14 colored plates, numerous half-tones.

This book seems admirably adapted for the use of the primary teacher who would arouse in her pupils an interest in our common birds.

Twenty common birds are dealt with biographically. Stories and poems concerning them are interspersed at intervals.

Fourteen colorityes from mounted birds facilitate identification, and, with numerous photographs of nests, eggs and young birds, chiefly by Herrick and Dugmore, should hold the child's interest and stimulate its curiosity. We note that in republishing Ernest Seton's verses, 'The Myth of the Song Sparrow,' the author has failed to say that they originally appeared in Bird-Lore. —F. M. C.

Notes on the Herons of the District of Columbia. By Paul Bartsch. Smithsonian Miscell. Colls. Vol. XL. Washington, 1903.

Nine species of Herons have been recorded from the District of Columbia, four of them as breeding, and Mr. Bartsch here tells of the status of these birds and gives us the results of his experiences with them. Specially interesting are his studies on a colony of

Black-crowned Night Herons, with numerous illustrations, and his photographs of Little Blue Herons and American Egrets, the former of which, in immature or white plumage, appear to be surprisingly common about Washington in the late summer.—F. M. C.

The Inheritance of Song in Passerine Birds. By W. E. D. Scott. Science, June 24, 1904, p. 957; August 26, 1904, p. 282.

Mr. Scott here presents another of his careful studies of individual birds with particular relation to the inheritance of song. The species treated are the Rose-breasted Grosbeak and Meadowlark, broods of both of which were reared by hand isolated from other birds of their kind. The details of Mr. Scott's observations are exceedingly interesting, and his papers should be consulted by those interested in the subject of inheritance of nest-building ability as well as of song. Here we have only space to say that neither Grosbeaks nor Meadowlarks developed the song of their species, but were both influenced by the notes of other species within their hearing; the former by an Indian Bulbul, the song of which they acquired so exactly that it was difficult "to tell which species was singing," the latter by the European Blackbird.

Students of the molt in birds, in reading Mr. Scott's statement that he is "strongly inclined to the opinion that there is a physical change in the feather itself, which alters its appearance so far as color is concerned," will wish that he would give at length the grounds on which this opinion is based.—F. M. C.

The Ornithological Magazines

The Auk.—'The Auk' for July furnishes an unusual amount of profitable reading, and those of a speculative turn of mind will enjoy 'A Discussion of the Origin of Migration' by P. A. Taverner, as well as 'The Origin and Distribution of the Chestnut-backed, Chickadee' by J. Grinnell. It is Mr. Taverner's theory, perhaps not altogether a new one, that migration originated because certain areas, already fully peopled with birds, overflowed when, with the advent of the nesting season these areas failed to afford an adequate food supply for the additional young birds. This was the cause of spring migration, and diminution of food in the fall gradually drove the overflow back into winter quarters, limited by the supporting powers of the land. Mr. Grinnell's article is perhaps the most serious of its kind yet offered by a biological ornithologist of the modern school. The Chestnut-backed and the Hudsonian Titmouse are here derived from a common ancestor, of which each was a geographical race until isolation took place. The former now appears to have further differentiated into three races, and all of these hypothetical derivations are nicely shown by a map. The reader should remember, however, that with a corner-stone of hypothesis, a structure of graceful proportions may be more fanciful than real.

A classification of the Tyrannidæ according to anatomical and other biological characters is advocated by H. Von Ihering, and J. A. Allen illustrates the follies of synonymy by the word 'Catharacta' spelled in eight different ways. In lighter vein are extracts from an unpublished journal of Audubon's by R. Deane, while W. W. Cooke and E. H. Eaton furnish some notes on migration. An annotated list of the birds of the upper Pecos River, New Mexico, is written in Mrs. F. M. Bailey's pleasant style, but we regret to see 'Baird Sparrow,' 'Virginia Warbler,' etc., admitted to the 'Auk' instead of the possessive case being used. Evolution may some day eliminate the 's' as unfit, but except in geography it is still customary to write English as 'she is wrote.'

A thirteenth supplement to the A. O. U. Check-List closes the magazine, in which other matters of interest will be found besides the ones touched upon so briefly.—J. D., Jr.

Book News

Mr. H. E. Dresser has issued a prospectus of his forthcoming work on 'The Eggs of the Birds of Europe,' details of which may be obtained from the author at 3 Hanover Square, London, W.

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Bird-Lore's Motto:
A Bird in the Bush is Worth Two in the Hand

We have before remarked that effective bird protection means not only preventing the decrease of birds but taking measures which will result in their increase. We consequently are glad to respond to a general demand for information in regard to suitable types of bird 'boxes' or houses. It is proposed to devote a large part of an early number of Bird-Lore to this subject, and we ask the assistance of our readers in securing photographs of bird homes which they have found to meet the demands of various bird tenants.

In the 'Atlantic Monthly' for July John Burroughs discusses in a logical and convincing way 'The Literary Treatment of Nature.' The article should be read, and read carefully, by every one interested in the popular presentation of natural history subjects. The literary naturalist should have as much regard for facts as his scientific brother. It is in his presentation of them that he will depart from the formal and stereotyped methods or science.

The technical scientist addresses co-laborers in a similar field. At the outset he is assured of their attention and comprehension. A place of publication is provided in the Proceedings of learned Societies or Bulletins of Museums. He is not subject to editorial dictation nor under the slightest obligation to make himself interesting. He clothes his statements in the language of science, a garb well designed to disguise the most attractive form.

The literary naturalist, on the other hand, must primarily be interesting. This is an editorial requirement. He writes for publications whose existence depends on the pecuniary support they receive from the public. His articles must help sell the medium in which they appear. Now the literary naturalist may command the public ear in a variety of ways. He may be an unusually keen student of nature whose accounts of what he has observed, though simple in form, are readable because of their inherent merit. He may see no better than the rest of us but possess descriptive powers which, as Mr. Burroughs says, will enlist our sympathies and arouse our enthusiasm by so presenting his facts that their relation to our lives is emphasized. Or he may 'interpret' what he has seen or heard. Such interpretation, as Mr. Burroughs clearly points out, is not a scientific explanation, demonstration or hypothesis. It is not expressed in the vocabulary of science but in terms of his own personality,—an interpretation of self. So Mr. Burroughs remarks, "What do Ruskin's writings upon nature interpret? They interpret Ruskin"; and in the same issue of the 'Atlantic' the comment is strikingly verified by Ruskin himself, who in a letter to Charles Eliot Norton, writes, "When I am happy, a sparrow's chirp is delicious to me. But it is not the chirp that makes me happy but I that make *it* sweet."

Unfortunately, the desire to treat natural history subjects successfully in a literary way does not always lead to its fulfilment. The power to enjoy and appreciate does not imply the power to express. Hence the many manuscripts descriptive of experiences afield which fail to convey to the reader one thrill of the joy the writer labors fruitlessly to share with him. He lacks the power to transmute his pleasure into pleasure-giving words and sentences; he cannot interpret.

It is left to him, however, to see. If he cannot place an old fact in a new light, perhaps he can discover a new fact, when the world and consequently the editor will ever be ready to listen to him.

The Audubon Societies

"You cannot with a scalpel find the poet's soul,
Nor yet the wild bird's song."

Edited by MRS. MABEL OSGOOD WRIGHT and WILLIAM DUTCHER

Communications relating to the work of the Audubon and other Bird Protective Societies should be addressed to Mrs. Wright, at Fairfield, Conn. Reports, etc., designed for this department should be sent at least one month prior to the date of publication.

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Conscience and the Game Laws

It is all very well, the passing of adequate laws for the protection of game-birds, but the conscience of the average sportsman is such a complex organization that its cogs invariably slip or fail to move altogether when called upon to recognize certain subclauses of the very laws that he has labored to have passed.

The man who would rightly consider it a heinous crime against sport to shoot a bird the evening before the day of open season, to snare game, or even in season to shoot the summer-hatched flocks of immature or 'bumblebee' quail, will not for a moment hesitate to ship game from a state that prohibits the practice, or carry game from the southern states that have a prolonged season into states where the season has long since closed.

The fact that he is oftentimes violating federal as well as state law moves him not at all. Into his trunk, steadied by his

clothing, go the birds; into his grip, a few more; large-sized cigar boxes are used for conveniently expressing half a dozen quail to a friend, or perhaps a starch, or even larger grocery box may be utilized. This accusation is not based upon speculation, for I know half a dozen sportsmen who dispose of the game they kill in this way quite as a matter of course, as if they considered the non-transportation clause as applying only to the market hunter who sells his game.

They sell game, they, the thoroughbred sportsmen? Never! they merely use it as courtesy coin to pay off little social debts to their friends, and especially their friends' wives.

And these wives?—bigoted Audubonites some of them, too, who even have ethical qualms about using geese-feather pillows—do they decline to receive these smuggled birds and become parties of the second part by eating them? Not a bit of it. The worse of the whole matter is that the law cannot cope with the breach of itself at all unless game custom-houses could be established at all state lines, which is of course an impossibility. Yet in this, as in many other differences between the law and the lady, no greater aid can be had in the working out of justice than that which comes from the lady herself. The woman who teaches her children humanity and to keep their fingers out of nests, and banishes forbidden plumes from her head-gear, must go a step further and refuse to accept as a gift game either out of season or shipped against the law, just as she would refuse to buy smuggled goods, even if it robs her table of one of the attractions that as a good housewife she greatly covets.—M. O. W.

National Committee Notes

By the Chairman

The matter of incorporation progresses slowly, but surely. The charter, constitution and by-laws are being prepared very carefully, necessarily by means of correspondence, which entails delay; however, it is better to be a little slow in the beginning than to make haste and mistakes.

It has been decided to substitute the word "Association" for "Committee" in our title, because the former word more clearly expresses the relation of the central body to the several state societies, the American Ornithologists' Union and the supporting public. In addition, our attorney states that the substitution will simplify the act of incorporation, as it will render unnecessary considerable advertising which would have to be done in case the present title were continued.

The Chairman dislikes to be compelled to revert to the subject of money so often, but a deficit of over $300 at the present writing, for which he is personally responsible, causes considerable worry and uneasiness. Certainly among the readers of Bird-Lore there should be some who are willing to share this burden.

It is gratifying to learn that the Republic of Mexico is awakening to the value of bird life to agriculture. Her Commission of Agriculture is distributing literature, forming ornithological leagues and revising state laws for bird protection. Dr. A. Meraz, of the Commission, has requested the privilege of using the electros of the illustrations of our Educational Leaflets in its publications. In response to this request, a complete set of electros have been shipped to him. As so many of our birds either winter in or pass through Mexico during the migration seasons, it is very pleasant to be able to thus establish international relations for the protection of birds. It is hoped that such relations may some day be established with the Central and South American countries, in order that plume-hunting may be stopped there, thus cutting off one of the sources of supply for the London feather trade. This is the only method by which the beautiful Hummingbirds and the few remaining American White Herons can be saved.

In the May–June number of Bird-Lore mention was made that the Navy Department, at the request of the Committee, had directed that the birds on Midway Island, a Pacific cable station, should be protected. That this order is being carried out the following newspaper item proves: "A cablegram has been received from Lieut. C. S.

Owen, commanding the detachment of marines at Midway Island, the landing point of the Pacific cable, stating that the employees of the cable company have threatened to leave the island by the next steamer if the order of the department prohibiting them from carrying firearms and shooting the beautiful birds of the island is enforced. The department's reply to this cablegram was that the order was to be rigidly enforced, as the officials here are determined to put a stop to the carnage of these birds of plumage."

California is still making great strides, new local branches being rapidly organized. Secretary Way writes: "I believe we will get 1,000 junior members in Pasadena. The letters I am getting from children, and the interest they are showing in this work, is decidedly encouraging." Mr. Way conducts a department in the 'Pacific Fruit World,' a paper of wide circulation, through which he has an opportunity to plead the cause of bird protection in a very forcible manner.

In addition to the above, the Society is making a determined effort to preserve the Mourning Dove. Large numbers of Educational Leaflets No. 2 are being circulated, also a special leaflet entitled 'Save the Nesting Doves' has been prepared by the California Society and is being used with good results. This aggressive fight to protect this beautiful and useful bird is strengthening the California Audubon Society and is bringing it prominently before the public. An active, aggressive and progressive society is like a two-edged sword, cuts both ways,—helps itself and weakens the opposition. Such work is commended to some of the other societies who seem somewhat lethargic.

Some large colonies of sea-birds breeding on the Oregon coast have been brought to the attention of the Committee, also certain acts of vandalism committed there. Steps have been taken to prevent such occurrences in the future, through the coöperation of Mr. J. W. Baker, State Game Warden. Details of the above will be given in the annual report, and it is hoped that it may be accompanied by some interesting photographs.

The North Dakota Audubon Society has commenced a very active campaign for state work. It has in progress an extremely important movement, the details of the successful completion of which may be given in the near future, certainly in the annual report. It is of such a character that publicity at the present time might delay or defeat the project.

In North Carolina the citizens will soon learn that the Audubon Society is a force, for it has, since its organization, conducted fifty successful prosecutions for violation of the bird- and game-laws.

One thousand warning notices, containing the new state bird- and game-laws and also the provisions of the Lacey Act (Federal Law), have been sent to Louisiana for distribution. Frank M. Miller, President of the Louisiana Audubon Society, reports that during the past season five thousand eggs were destroyed at one time, at a breeding-ground on the Gulf Coast. This was done in order that fresh eggs could be collected subsequently. Mr. Miller, during the coming winter, will have a complete survey of the Louisiana coast made in order to locate all of the breeding-grounds, so that complete protection by wardens may be given in 1905.

The Committee has long felt that inasmuch as all the warning notices prepared, and sent for distribution to the several state Audubon Societies, contained, in addition to the State Law, the Federal Law or Lacey Act, there should be no objection to having them displayed prominently in post-offices. Application for such permission was made to the Post-office Department, and the same has been granted. A facsimile of the order has been prepared and will be furnished to any of the Audubon Societies that desire to place notices in the post-offices of their state, provided the said warning notice is in the form detailed above.

Two thousand five hundred copies of an 'Open Letter to Clergymen' have been sent to the religious and secular press of the country, and it is being published widely. The letter refers mainly to the use of the aigrette and the rights of birds as citizens. In this connection a pleasing incident has

come to the attention of the Committee. In a parish leaflet issued by a Massachusetts church is the following quotation from Educational Leaflet No. 7: "The wearing of aigrettes or plumes from the White Heron has now become a question of ethics, which every woman must decide for herself. It matters not a whit where the plume comes from,—the fact remains that the woman who wears one is party to a cruel wrong, and the plume, itself, becomes a badge of inhumanity." Will not the clergymen of the country follow this excellent lead? Certainly human beings will be held responsible for all acts of cruelty to even the most humble of God's creatures.—W. D.

The Illinois Society

As a foreword to this report it is perhaps best to state that it covers the time between the annual meeting of 1903—March 28—. and that of 1904—April 23—and thus, in a few items, overlaps the last report published in BIRD-LORE.

With the courtesy due to those rare creatures that 'never lie,' our figures must speak first. Our membership has been increased by the addition of 60 adult and 1,573 junior members, making the total number joining since our organization April 1, 1897, 1,035 adults and 15,059 juniors, a total of 16,094. We have sent out 7,060 leaflets, nearly all being the publications of the National Committee, Mr. Dutcher's report for the A. O. U. Bird Protection Committee and the National Committee leaflets being sent to all our active and associate members. The secretary has received about 500 letters representing nearly half of our 102 counties, and extending from Galena, in the extreme northwest, to Massac county, in the extreme south of the state. Our receipts from members' dues, etc., amounted to $232.76, and our expenses were $225.61. As we began last year with a balance of $57.16, we were able to begin this year with one of $64.31, a sum that must rapidly decrease in response to the constantly increasing demands upon us.

As to increase these demands, which represent increase of interest, is our reason for being, we must rejoice in this evidence of success, while we long for the means to meet the demands more generously. The Junior Department, under the leadership of Mrs. W. M. Scudder, is developing in many directions, and is, of course, the most encouraging feature of our work. The teachers of our schools are, in many cases, doing most satisfactory work. to which the children are responding bravely.

Our first legal Bird Day, under the law passed in 1903, was kept this spring, and, through the kindness of the State Superintendent of Schools, Mr. Alfred Bayliss, the Audubon Society, through its secretary, was allowed space to present the cause of the birds to the teachers in the excellent Arbor and Bird Day Annual issued by the state.

The usual public meetings have been held in the Chicago Academy of Sciences. At the one in November an interesting illustrated address on the 'Water Birds in the Chicago District,' was given by Mr. Gerard Allen Abbott, while the annual meeting in April gave us the great pleasure of listening to Mrs. Irene Grosvenor Wheelock's charming talk on the 'Birds of the Farallones.'

The illustrated lecture belonging to the society has been on the road almost constantly since February, and is one of our best workers. Our two libraries are slowly winning their way, though far less popular than their more attractive co-worker. The work done by our small band of faithful secretaries—may their tribe increase!—deserves special praise. Lacon, Galena, Henry, Princeton, Quincy, Belvidere, Moline, Ravenswood, Streator, Bristol, all should have honorable mention. At the annual meeting it was decided to form a committee on new members, this committee to be made up of persons not on the Board of Directors. The good results of this action are already proving its wisdom.

That we need for the future more workers, more help, is a twice- and thrice-told tale, but that we do need them is also the proof that the work of the past years has at least laid the foundations for the 'bird house' we are trying to build for the little feathered workmen of our state.

MARY DRUMMOND, *Secretary*.

NATIONAL COMMITTEE OF AUDUBON SOCIETIES

EDUCATIONAL LEAFLET NO. 11

THE SCREECH OWL

Order — *Raptores*

Family — *Bubonidæ*

Genus — *Megascops*

Species — *Megascops asio.*

The Screech Owl

By WILLIAM DUTCHER
Chairman National Committee of Audubon Societies

DESCRIPTION

Adult Male and Female.—The Screech Owls are dichromatic, i. e., having or producing two colors. Red phase: General aspect above bright rufous, generously streaked with shaft-lines of black; in some individuals the shaft-lines on the head are replaced by black spots. The scapular feathers show considerable white; there is also more or less white in some individuals above the eyes. Underneath: base color is white, overlaid with rufous, generally in bars; there is also considerable black in quite a pronounced half-collar; heavy black shaft-lines on breast, smaller ones and feather tips on flanks and belly. The legs and feet are feathered nearly to the end of the toes. Bill is horn color, almost hidden by feathers and bristles. Eyes are very large, bright yellow in color. Gray phase: General appearance above brownish gray; the markings of black and white are almost identical with those on individuals in the red phase. Underneath: gray and white profusely marked with black shaft-lines and narrow black or brown bars; wings and tail in both color phases are barred; ear tufts are erectile and are about one inch long; entire plumage is very soft and fluffy in texture; there is no seasonal change in color of plumage.

Young.—Entire plumage is regularly barred with gray or white; shaft-lines are entirely absent.

Size.—Varies from 7.50 to 10 inches in length from tip of bill to end of tail, the female being slightly the larger of the sexes.

Nest.—Is nearly always in a natural cavity in a tree or in a deserted Woodpecker's hole, although occasionally nests may be found in boxes nailed to trees, or in dark corners of barns, out-buildings, etc.

Eggs.—From four to five in a set; pure white in color, and somewhat glossy.

Distribution.—The Screech Owl (*Megascops asio*), A. O. U. Check List No. 373, breeds wherever it is found; its habitat extends throughout temperate North America, east of the 100th meridian, between the parallels of 32 and 49 degrees of north latitude. Several subspecies and closely allied species have been described, which extends the range of the Megascops Owls over nearly all of the balance of western North America, from Sitka, Alaska, on the north, to Guatemala on the south. The differences between these geographical races and allied species are very slight, being mostly variations in size or color. A difference of one-half an inch in the measurement of a wing, or a slightly grayer, or brighter rufous tinge on under side or upper parts, or slightly heavier shaft lines or not quite so many of them, are sufficient warrant to describe and name a new race. These are immaterial facts for the farmer, teacher or child; it is enough for them to know that all of these numerous sub-divisions are, after all, Screech Owls.

In humid localities Owls have a rather darker plumage, while the reverse obtains in arid places. The habits of all these Owls are the same, every member of the family being of the very greatest economic value.

The farmer or student when studying the Screech Owls must always bear in mind the two phases of color—red and gray. A bird of one color may be mated with a bird of another color, and their young may all be of one color, either red or gray, or the parents may be of one color and the young of mixed colors. However, no matter what the phase of color is, no person can mistake a Screech Owl for any other species of Owl. The only other species that might possibly be confounded with them is the Sawwhet Owl, which lacks ear-tufts, is brown, and does not have black shaft-lines. The Pigmy and Elf Owls, of the West, are very much smaller than the smallest of the Screech Owls, being not larger than a Thrush. A family of birds of such wide distribution naturally has several common names. The Screech Owl is often known as the Red Owl or Mottled Owl, probably derived from its plumage, or Shivering Owl, undoubtedly derived from its notes, and Little Horned Owl, from its ear-tufts, and Cat Owl, evidently from the shape of the head.

In the East, Screech Owls are very fond of living in apple orchards, especially if the trees have been neglected and are decaying, thus furnishing holes in which the Owls may breed or hide. The farmer who is so fortunate as to have a pair or more of Screech Owls attach themselves to his orchard, should consider himself especially favored, for the good that they will do him by keeping in subjection the mice pest is beyond calculation. A very intelligent farmer living in Seneca county, New York, informed the writer that mice and rabbits, principally the former, had in one winter (1899-1900) killed every tree in a five-acre peach orchard. The trees were girdled a few inches from the ground by these

rodents. The value of his 800 bearing trees was not less than $2,000. In this case would it not have been more economical for the owner to have encouraged Owls and other so-called birds of prey, that live largely on mice and rabbits, to remain on his premises, even though a chicken might have to be sacrificed occasionally? It is probably a fact that Screech Owls remain mated during life, and, as they are non-migratory, if they once become attached to a locality, they are apt to remain there, unless they are harassed and driven away or their home tree is destroyed, and they are compelled to seek another, in which case they do not move any great distance.

For this reason they are doubly of value to the agriculturist, as they are his helpers during the entire year. Their prey, the mice, are yearly tenants, and the farmer who is wise will give the Screech Owl on his acres a perpetual free lease.

Another feature in the life-history of the Screech Owl, that makes it doubly valuable, is that it is nocturnal in its habits and hunts for food at night when all the other birds are at rest. It thus complements the day work of the rodent-eating Hawks,—Nature in her wisdom thus providing a continuous check on the four-footed vermin of the ground.

Although the Screech Owls are nocturnal by choice, yet they have no difficulty in seeing in the daytime, although they then seem stupid and are not at all alert and wide-awake as they are after sundown.

During the daytime they hide in holes in trees, or in some secluded place in the foliage, to escape observation. Should they be discovered they are apt to be mobbed by other birds, especially Jays. This fact must have been well known to the ancients, for Aristotle recorded it over three centuries before the Christian Era, in the following words: "The Noctuæ, Cicumæ and the rest, which cannot see by day, obtain their food by seeking it at night: and yet they do not do this all night long, only at eventide and dawn. They hunt, moreover, mice, lizards and scorpions, and small beasts of the like kind. All other birds flock round the Noctua, or, as men say, 'admire,' and flying at it buffet it. Wherefore this being its nature, fowlers catch with it many and different kinds of ittle birds."

The Owls are supposed by many superstitious people to be birds of bad omen; this probably arises in the case of the Screech Owl from its weird, tremulous, shivering, wailing, whistling note. To the writer there is a singular and fascinating attraction in its notes, which are heard in the dusk of early nightfall, especially when its shadowy form is noiselessly flitting by like a huge night-flying moth, which can only be seen as it crosses a background of fast-fading western light, the last faint beams of a sun far down below the horizon.

The homes of Owls may often be discovered from the pellets of undigested food, bones, fur, etc., disgorged by the birds.

While the life-history of the Screech Owl family is interesting, yet their economic status is the important fact which needs wide publicity. All scientific writers and students of the food habits of this species of Owl join in pronouncing it to be one of the most beneficial and least harmful of all birds. In addition to the great number of rodents it destroys, it also eats enormous quantities of noxious insects. In the First Annual Report of the United States Entomological Commission (1877) it is stated: "The injury by the Rocky Mountain locust to the agriculture, and, as a consequence, to the general welfare of the States and Territories west of the Mississippi, has been so great during the years 1873-6 as to create a very general feeling among the people that steps should be taken by Congress looking to a mitigation of an evil which had assumed national importance." On p. 119 of the report it substantiates the above statement by actual figures, showing that in the four corn-growing states of Kansas, Nebraska, Iowa and Missouri, in 1874, the loss by locusts was 142,942,800 bushels, with a money value, at 28 cents per bushel, of $40,000,000. An examination of the stomach contents of eight Screech Owls (p. 42, appendix II) taken at that time in Nebraska disclosed the fact that they had eaten just

prior to their capture, 219 locusts and 247 other insects, besides two mice. One of the Owls had eaten a small bird, but it had also eaten 32 locusts and 8 other insects.

Mr. George C. Jones, of Fairfield County, Connecticut, says: "I think the smaller species of Owls feed upon the cutworm to some extent. I have found cutworms in the stomach of the common Screech Owl. The fact that both the cutworms and the Owls are nocturnal leads me to believe that the Owls, of all the birds, are the most efficient exterminators of this formidable pest and should on this account receive protection. The farmers here are large growers of tobacco, and the damage done by the cutworm to the young plants and the labor of resetting forced upon the growers is almost incalculable. I believe that if our native Owls were as plenty as some other species of birds the ravages of this destructive worm would be much less than at present."

Dr. A. K. Fisher, in his report on the Screech Owl (Bull. No. 3, Div. of Ornithology, U. S. Dept. Agl.) says: "Their economic relations are of the greatest importance, particularly on account of the abundance of the species in many of the farming districts, and whoever destroys them through ignorance or prejudice should be severely condemned."

In his summary of the results of the examination of the stomach contents of 255 Screech Owls, he gives the following valuable facts: 1 contained poultry; 38, other birds; however, many of these were English Sparrows, the well-known introduced pest; 91 had been eating mice; 11, other mammals; 100, insects; 32 had been eating an assorted diet of lizards, fish, spiders, crawfish, scorpions, etc., and 43 stomachs were empty.

This brief outline of the life-history and economic value of the Screech Owls is presented to the farmers, fruit-growers and school children of the country, with the hope that it will create in them a desire to study and protect this very valuable and interesting class of birds.

Study Points for Teachers and Students

Trace distribution of the Screech Owls on the map. Relate some of the life-history of the Screech Owls from your own observations. Describe breeding places you have found. If in a tree, what kind? What is the botanical name of the tree? Give your own reasons why Screech Owls should be protected. Who was Aristotle? Tell something interesting about him.

For additional valuable information regarding the Screech Owls, consult the reference books named in leaflet No. 8, also "First Annual Report of the United States Entomological Commission Relating to the Rocky Mountain Locust," Government Printing Office, Washington, D. C.

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Bird-Lore

A BI-MONTHLY MAGAZINE
DEVOTED TO THE STUDY AND PROTECTION OF BIRDS

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. VI NOVEMBER — DECEMBER, 1904 No. 6

How to Study a Bird

By ERNEST THOMPSON SETON

A DEFINITE plan is so helpful, that long ago I devised a formal scheme of bird study. This was published in 1887, and again, in 1899, in 'The Osprey,' but it has been so much modified since that I venture to bring it again to the notice of bird students. I have always felt that the "real history of a bird is its life history. The deepest interest attaches to everything that reveals the little mind, however feebly it may be developed, which lies behind the feathers." So says the celebrated English ornithologist, Seebohm, and I am very sure that there is no lack of bird-lovers to re-echo the sentiment. The first two questions about a new bird—"What do you call it?" and "Where did you get it?"—are of very great importance, and of such a nature that they insist on first notice; but, having settled them, as we now have, sufficiently for the purposes of the ordinary observer in eastern America, we are brought face to face with what is, after all, of chief interest, the great question of the "little mind."

I am satisfied that a harvest of profit and pleasure awaits any one who will try to fill out this schedule for any one bird; taking, preferably, the one he knows best and adding to his own information all that he can gather from outside sources.

In the present schedule I have purposely omitted the anatomical studies that were prominent in the original. This is not done because I think less of anatomical studies and of collectors' work than formerly. I still believe that one important fact is worth many small birds, but the time has gone by when adequate good can result from ordinary collecting in well-known regions. The experts of our museums are the only ones who should be allowed to collect bird-skins today. It is safe to say they will not abuse the privilege. Knowing the value of birds, as they do, better than any other class of men, they are not likely to take the life of a Sparrow, even, without a very sufficient justification.

The headings and questions here given are limited by the knowledge

and theories of the writer; but it is nearly certain that any one faithfully following their lead will stumble on clues which, properly followed, will guide him to new ideas and unexpected light. Such has ever been the experience of those who have blindly but earnestly groped after the truth.

THE STUDY OUTLINE

1. *Spring Migration.*—Give earliest appearance, etc.; state whether in flocks or singly, the species by itself or associated with congeners or wholly different species, males in advance or both sexes together, by day or by night; crossing a lake or skirting its shores; flying high or low. Record in full the weather at the time of observation, also date, locality, moon, etc. Does the bird hide or return southward during the late spring storms?

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

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

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

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

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

7. *Habits.*—What are its peculiar tricks of attitude, motion and expression? Does it hop or run? Is its flight ever undulatory, like that of many of its relatives? Is it nocturnal or aquatic at all? Does it ever wade for food, swim or dive to escape its enemies? Does it indulge in any sort of play, especially in a social way? Does it enter holes or burrows? How is it affected by loud sounds?

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

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

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

11. *Senses.*—Is their power of smell noticeable? Do they rely on their eyes most?

12. *Tools.*—Are they ever known to use a tool, that is, a stub, a stone or other foreign object, to help the beak or claws ?

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

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

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

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

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

18. *Mating.*—Note fully any courtship observed, with maneuvers of both birds or competitions with rivals; is it ever polygamous or polyandrous ? Do the same birds remain paired throughout the season, or for more than one season ?

19. *Nesting.*— Which of the pair selects the nesting site ? Give full particulars of construction, materials, proximity to the ground and to the water, of each nest; preserving, photographing or sketching the same, and observing whether covered over or approached by a covered way. Does it shape the nest with bill, claws or breast ? Does it line the nest with its own feathers ? Does it show preference for any kind of lining or building material ? Does it ever evidently go a long way to get certain material while others are close at hand ? Is the same nest ever used twice ? How does it clean the nest while in use ? Does it use mud for building ? Does it steal nesting material from other birds ?

20. *Eggs.*—Give details of laying, time between each oviposition, variation of the eggs in size and color, stating whether those first laid are large or more heavily marked than those laid later; are the eggs turned daily, and, if so, by which bird ? Is the first clutch of eggs more numerous than others of that season ? Are young birds more prolific than older ones ?

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

desert her charge? Do the first-hatched little ones of the brood help their younger brothers in any way?

22. *Cowbird Parasitism.*—Is the bird ever imposed on by the Cowbird? Particularize each case observed, or does any other species ever lay in this bird's nest? Is the species ever guilty of parasitism of this kind, or does it ever act dishonestly in getting a living?

23. *Crime.*—Have the old ones been known to kill the young by accident or for reason? Or to kill congeners, or to make serious blunders or to suicide, and, if so, how? Or to kill the young of other birds?

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

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

26. *Competitors.*—With what species do they most actively come into competition in the struggle for life, and how do they try to overcome them?

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

28. *Friends.*—Have you observed any peculiar friendships formed, as with birds of other kinds, beasts or man?

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

30. *Age.*—What age does the species attain? What is the proof of this?

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

A LESSON

"Thank! Thank!" Said Nuthatch, overhead.
I looked around with opened eyes
At gorgeous earth and glowing skies.
"Thank! Thank! indeed," I softly said.

—Elizabeth Dana.

Some Familiar Florida Birds

By MRS. F. W. ROE

With photographs by the author

AT our winter home in Florida, on the Halifax river, food for both hard- and soft-billed birds is kept the year round on trees, the ground, and on one veranda, where water for their bathing is kept also; and in this way we have gradually attracted many varieties, and have been able to study them while only a few feet from us. Close to one window of the cottage is a large live-oak, where Cardinals, Mocking-birds, Woodpeckers, Blue Jays and numerous Warblers, and other species, can be seen at almost any hour of the day; and it is on this tree, also, that

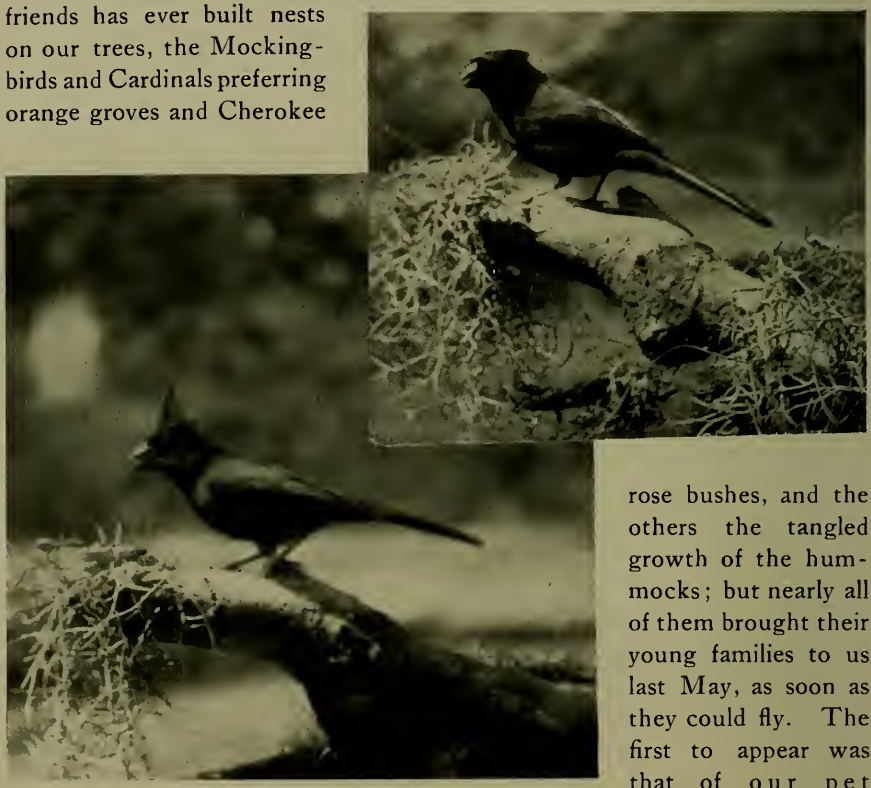
FLORIDA BLUE JAYS

a Brown Thrasher has made his nightly home during the past two winters. As the wife of an officer of the Regular Army, I have had an exceptional opportunity for the cultivation of the "seeing eye" in many states and territories, and I have found the birds of Florida not only more beautiful, but far more attractive and lovable, than those to be seen north or west.

The young Mocking-bird rarely sings after the first cold winds in the fall; therefore, very few northerners know how beautiful the natural song of this bird is, or how perfect the technique, before he has learned to imitate other birds, and has turned his own exquisite *aria* into a rag-time pot-pourri of the notes of his neighbors. And only a favored few of those who remain late in the season hear the delightful song of the female Florida

Cardinal, as this dainty little lady condescends to sing only in the spring, and not then, except when alone and her surroundings perfectly quiet. Her song is very low and sweet, but in exact imitation of the far-reaching flute-like notes of her handsome mate. Then, there is that little clown, the Florida Blue Jay, with his merry *Kris-krinkle*; how many bird students have been so fortunate as to hear the charming song this little fellow sometimes warbles, in between naps, on warm drowsy afternoons in spring?

None of these feathered friends has ever built nests on our trees, the Mocking-birds and Cardinals preferring orange groves and Cherokee rose bushes, and the others the tangled growth of the hummocks; but nearly all of them brought their young families to us last May, as soon as they could fly. The first to appear was that of our pet Mocking-birds, consisting of the two old birds and four young. The father of this family has made his home, during the past three winters, on an oak that is very near my bedroom windows, leaving us for only a short time in the spring, during the nesting season. Many a skirmish have I witnessed between him and the Blue Jays, when the latter have gone to his tree on chilly winter mornings, to catch the first warm rays of the rising sun; and I have noticed that in these battles, the Mocking-bird was invariably victorious, often driving away as many as four Blue Jays at one time. Like all Mocking-birds, he



FLORIDA CARDINALS
Upper figure, male; lower figure, female

is rather pugnacious, and shows a decided dislike to the migrants, particularly the Robins, not one of which will he permit to remain in the yard. He is a remarkably fine singer, and imitates almost any bird that sings or calls, in that part of the state.

Next came several families of Florida Cardinal Grosbeaks, the young birds distinguishable by their very dark bills, totally unlike the pink bills of the old birds, and which gave them a most comical appearance. The young males had at first only a few red feathers in cap and breast, to mark them from their olive sisters. The Cardinals feed on the ground quite as often as on the trees, always picking out the wheat from the food, consisting mostly of grain and oat-flakes, which I scatter around for Quail, Towhees and Ground Doves. We have counted fifteen of these little beauties on our lawn in one flock, each one busily engaged in cracking grains of wheat.

There were three families of Florida Blue Jays with us at one time, and the plaintive cries of the young birds could be heard from all directions. We were greatly surprised at the length of time—over one week—these fluffy little creatures remained quietly on their own special tree without attempting to do more than hop from branch to branch, and also at the perfectly noiseless and unobtrusive flitting about of the old birds. The Florida Blue Jay is smaller than the northern, and has less white on wing coverts and tail. He is more inclined to be sociable, also.

At one end of our cottage is a large, outside brick chimney that extends up through a projecting roof, and on the chimney, under the roof, two Flickers have roosted, or rather *hung*, every night during the past two winters, a bird on each side, leaving us only in the spring, when they, too, were attending to household affairs. They showed their appreciation of our hospitality, however, by bringing us four beautiful young Flickers very early one May morning, and which were evidently just from the nest. When I saw them first, they were resting close together on a pile of coquina rock just at the edge of the river, a queer place it seemed, too, for these shy 'high-hole' birds of the woods. Their cry of three notes was most peculiar, and unmistakable after having once been heard. One little bird would set up a shrill pipe, and wag his head from side to side, when instantly the other would do likewise—then there would be a silence for a few seconds, then a repetition of the piping and wagging. I tried to steal out, hoping to get a snap-shot picture of them, but they were too wary, and flew away.

Decidedly the most fascinating of all the young birds which came to us was a male Red-bellied Woodpecker, the parents of which can be seen in accompanying photographs. It was exceedingly amusing to watch the bright eyes of this dear little fellow, as he closely followed his father from tree to tree, and to see how very conscious he was of his own importance.

When he first came, the top of his head was nearly white, which made him look bald by the side of his red-headed parent, but after a day or so the bright scarlet feathers began to appear, and looked like drops of blood on the white. As soon as he could provide for himself, the father ceased to notice him, and began to show around another young one, a timid little female. During all this time, the mother was not seen once, and we concluded that she was looking after other young members of the family.

The Brown Thrasher came regularly for his supper just before dark, and his threatening scold could be heard some time before he would appear

MALE RED-BELLIED WOODPECKER

at his favorite feeding-place. I have often seen him on the ground in between some orange trees in our yard, 'thrashing' the sand from side to side with his long bill, until his head and back would be covered with dust. Many an hour did I wait before I could obtain even a snap-shot of this most tantalizing bird, and then, at the last, how vexatious it was to have him hide his lovely long tail behind the moss, as one can see by the photograph. In my estimation, Chapman does not do justice to the glorious song of this bird. Its notes are so varied, so full of volume, the long intervening pauses giving an expression of great dignity. In the early spring it sings the same notes very low, making a melody that is inexpressibly sweet, but which can be heard only when very near them.

Dozens of other and smaller birds come to us, some daily, others only occasionally, the daintiest of all, perhaps, being the little Painted Bunting,

in his gorgeous coat of red, blue, lemon and black. A pair of Quail made us almost daily visits for several winters, and frequently sat upon some rustic chairs which adorned our lawn. This close environment of these exceedingly shy birds made known to us several characteristics of the species which are not, I think, generally known. One day, the cock stalked inquiringly into the grounds, and soon came upon the food which I had just scattered about. At once he began to pick it up with great gusto,

FEMALE RED-BELLIED WOODPECKER

when suddenly he stopped and stood erect. Then, looking about him, he saw an oak tree which had been bent over by heavy winds at quite an acute angle. Running rapidly to the foot of this tree, he walked up the inclined trunk, until he was at least ten feet from the ground. There he stopped, and uttered a very peculiar whistle. It was not the *hob-white* with ascending accent, but the *white* alone, the accent sharply descending. A party of friends sat with me on one of the verandas, and, as we watched him, we wondered what would happen next. He repeated the call several times, when suddenly there was a whirr and a rustle of leaves, as his mate, on the wing, shot in through some oleander and guava bushes, and landed, with a bit of a run, right upon the scattered food, and at once began eating

rapidly. The cock, however, did not see her, and continued the call. Shortly wearying, he walked leisurely down the tree, with a most dejected air, and directed his course to the food, when suddenly he espied his feeding mate. He halted, stretched his neck to its uttermost length upwards, and gazed upon his greedy spouse as though he could not believe his eyes, and then, darting to her through the intervening grass, began feeding close to her side, with a most satisfied and affectionate demeanor. We had not previously known that these birds, when left to their own pretty mannerisms, and not unceasingly terrorized by the insatiable hunter, would sit and sun themselves on chairs near a veranda where numerous peoples at talking. Neither did we know that, after finding desirable and exceptional food, they would forgo their individual hunger, until they had called to them a less fortunate mate, and, above all, that they had a peculiar and little used whistle for this summons, and that they would seek an altitude to make it the more effective. Some of the observers of this little love scene between the Quail had hunted them, with dog and gun, many seasons, in many places; but I am positive that, in the future, this sport, if indulged in by them at all, will give far less pleasure, because of their having been with us in Florida that spring afternoon on the banks of the Halifax.

BROWN THRASHER

Bird-Life of a Swiss City

By REV. WENDELL PRIME

AS BIRD-LORE'S work relates to the protection, as well as the study of birds, I am encouraged to send you a few lines in regard to the way in which the birds fare in Zürich, the largest, and in some respects the most important, city in Switzerland. Since the first of the year I have occupied a room on the first floor of a house in one of the most frequented residence quarters of the city. Observing the provision made for the birds by many of my neighbors, I fastened to the railing of the veranda, upon which a glass door opens, a small, open bird-house. In this I placed a dish with bread-crumbs and another with water. I also fastened to one of the veranda posts a "food-giver," which is a stick about one foot long from which are suspended, by short cords, a wooden cup containing bird-seed, a net-work box containing walnut-kernels, and the half-shell of a walnut containing suet. Immediately my restaurant attracted numerous customers, especially Sparrows, which are not so pugnacious as their American relatives. They did not prevent numbers of Chaffinches or Beechfinks (*Fringilla cælebs*) from having their daily share of the spoils. These beautiful birds, by their color and song, are a continual joy in the streets and parks and gardens. But the most important visitor at the bird-house, from the very beginning of the year, was the Blackbird or Amsel (*Turdus merula*), a black Thrush, about the size of our Robin and a much finer singer. His presence was respected by the smaller birds, but he was not intolerant. Though he occupied pretty much all the best part of the little house, the others were able to feed at the sides and corners. At the "food-giver," only a few feet distant, I had a totally different company. For many weeks it was patronized exclusively by the Meiser, the relatives of our Chickadees and Tits, of which half a dozen species are common in middle Europe. My visitors were the Kohlmeiser (*Parus major*), about the size of our Chickadees, but with much beauty of varied color. Alighting on the edge of the seed-cup, they clean it out to the very bottom. Alighting on the stick, with two or three twitches of the beak they pull up the net-work bag and, holding it with the feet on the stick, they hammer like Woodpeckers at the walnut-kernels. In the same way they reach the suspended shell with suet, but they use this only occasionally. In the latter part of March, the "food-giver" became the resort of another visitor, the Grünfink (*Fringilla chloris*). They had no difficulty in managing the seed-cup or the walnut-bag. Sometimes two pairs would be at work at the "food-giver" at the same time. They are the only birds, except Meiser, which have made any attempt to use it. All these five kinds of birds continued

their daily visits throughout the entire spring and summer. Beechfinks and Amsels were less frequent as the season advanced, and now rarely come to the veranda, though they are still numerous in the neighborhood.

Besides these, I have had a few occasional visitors, the most conspicuous being the Goldammer (*Emberiza citrinella*), his clothing being mainly yellow. His calls were during the winter, when I saw him often on the street feeding with the Sparrows. In May the city and vicinity were invaded by a vast army of Reed Buntings or Rohrammers (*Emberiza schoeniclus*). They fraternized with the Sparrows in making the bird-house as clean as an empty pantry. They made no attempt to use the "food-giver," which seems precisely adapted to their habit of swinging on swaying plants and branches. Sometimes, when I open the door in the early morning, I find the food untouched and a cat on or near the veranda. This, however, seldom happens, for the cats know I keep a supply of stones with which to pelt them at every opportunity.

Many other birds than these I have mentioned are characteristic of the city in their season. Appliances for the feeding and nesting of different kinds of birds are for sale in the shops. Children are taught to know and love the birds, as well as other natural objects. No legislation can do so much for the attraction and preservation of the birds as that love for them which makes the entire community interested in their welfare and happiness.

DOWNY WOODPECKER
Photographed from nature, by A. L. Princehorn

Young Flamingos

By FRANK M. CHAPMAN

With photographs by the author

HEAD OF FLAMINGO ABOUT TWO WEEKS OLD, SHOWING THE BEGINNING OF THE CURVE IN THE MANDIBLE.

IN the current number of 'The Century' the writer has recounted, at greater length than was possible in BIRD-LORE, his studies in a Bahaman Flamingo colony made in June, 1904. For the circumstances attending this remarkable experience, the reader is referred to 'The Century'; here it is proposed to add certain details in regard to the habits and plumages of young Flamingos.

Although Flamingos are said to lay one or two eggs, my experience leads me to believe that they rarely, if ever, lay more than one; only two of the 1,500 to 2,000 occupied nests seen by me contained two eggs; all the others held one egg each, and it seems not improbable that the two eggs in one nest were laid by different birds, though, of course, it is possible that they may have represented twins.

There appears to be some variation in the time of the nesting season of Flamingos in the western Bahamas, but, under normal conditions, eggs are evidently laid the first week in May.

In the colony where my studies were made a few newly hatched young birds were seen by a negro scout on June 1. Two weeks later there were hundreds of them.

The period of incubation is not known, so far as I am aware, but it doubtless is not far from twenty-eight days. When the egg was pipped, the parent bird was seen turning it in the nest so that the opening would be uppermost.

When the young Flamingo emerges from the egg he appears to be covered with stringy white hairs, which, in drying, release downy plumules, and at the end of a few hours he is thickly covered with soft, dense down, usually grayish on the back and snowy white everywhere else. His legs and bill are flesh-pink, his eyes brown-black.

At this age the young Flamingo is nearly as active as a newly hatched Wild Duck. Chicks whose plumage was not yet dry and which, therefore, were not more than an hour or two old, crawled to the edge of the nest at my approach and dropped over its side in an ill-judged effort to escape.

This early development of the sense of fear in birds whose nesting-sites usually exempt them from the attack of marauding animals, was surprising and is not readily accounted for. So far as I observed, at this early age these Flamingos had two enemies — floods and Turkey Buzzards. The former, as I learned from two sad experiences, often bring disaster to the

YOUNG FLAMINGO RETURNING TO THE NEST

egg and the newly hatched chick ; the latter, in view of the comparative scarcity of food for scavenging birds in the Bahamas, find a Flamingo colony especially attractive, and, although I did not see them attack a young Flamingo, the chorus of protests which arose from the parent birds whenever a Buzzard sailed over the rookery was sufficient to arouse suspicions.

The first Flamingo rookery which I visited had been destroyed by rain three days before my arrival. The second colony discovered, and the one in which my studies were made, was also flooded, and at the time of my departure some nests were submerged and all were surrounded by water. Under these conditions eggs, of course, are ruined and very young chicks, like the one shown in the photograph, are doubtless drowned. Chicks over a day old can probably escape by swimming.

The young Flamingo remains in the nest three or four days. Should

THE GROWTH OF FLAMINGOS

The approximate ages of the birds shown in the accompanying plate are: (1) One day; (2) one month; (3) two months; (4) four months; (5) adult.

From mounted specimens in the American Museum of Natural History

he be forced to leave it during this period he evidently can find his way back. An accompanying photograph shows a chick climbing up into its nest with the aid of bill and wings. This nest was within ten feet of my blind, and on my approach the chick jumped out and ran away. After I had concealed myself the parent returned and, apparently in response to its calls, the young one appeared, and was soon snugly nestling beneath the maternal or paternal wing.

While in the nest, the chick, as described in 'The Century' article, is fed first by regurgitation, taking its food drop by drop from the tip of the

NEWLY HATCHED FLAMINGO IN A PARTLY FLOODED NEST, AN EXHAUSTED YOUNG BIRD, WHICH HAD LEFT THE NEST, AND A PIPPED EGG

parent's bill, and it also eats the shell of the egg from which it was hatched; this apparently is an invariable rule. Even after leaving the nest the chick is still fed for a time by the parent, which doubtless also induces it to pick up a living of its own.

It is an exceedingly interesting fact that the bill of the young Flamingo is straight and wholly unlike the singular, bent bill of the adult. Signs of a Roman nose, so to speak, first appear when the chick is about two weeks old, and at this time he begins to feed after the manner of adults. That is, the upper mandible is held almost parallel with the ground, and even pressed into the muddy bottoms on which the birds feed. It is then moved rapidly and sends a jet of water through the bill which washes away the sand or mud taken in with the food. Like the old bird, the young one now often

treads water or dances when feeding, to float its food off the bottom so that it can be more readily secured.

A curious habit of some young birds which I brought with me for purposes of study, consisted of an apparent attempt to feed one another. An accompanying photograph depicts two birds in the act, and renders further description unnecessary. At such times the birds uttered a rattling cluck which was heard on no other occasion.

The note of very young birds is a puppy-like barking. This is soon followed by a kind of squealing whistle, and this, in turn, by a chirruping crow which persists until the bird is at least two months old. The whistling note was the characteristic one at the time of which I write, and, under

YOUNG FLAMINGOS IN A FLOODED ROOKERY

proper conditions, the chorus of young birds could be plainly heard, day or night, at my tent a mile away. As the snowy natal down of the Flamingo chick increases in length it becomes much grayer, while the bill and feet change to lead-color. At the age of five or six weeks this down is pushed further outward by the second plumage, which first appears upon the shoulders. This second plumage is grayish brown streaked with black above, the under parts being much paler. The wing-coverts and under parts are delicately tinted with pink. This plumage is followed by the plumage of the adult, which is evidently acquired in late autumn or early winter, since, with one exception, all the several thousand birds I saw in May and June were in full plumage.

It is when the young Flamingo is in the second, or brown, plumage, and before he has acquired the power of flight, that he is most harassed by his unnatural but worst enemy — the Bahaman negro. The birds still remain

YOUNG FLAMINGO FEEDING AFTER THE MANNER OF THE ADULT

in or about the rookery, where the negroes capture them by running them down or by the use of a long rope. With a man at either end of such a rope, a group of birds is partly surrounded and driven over the muddy 'Swash' toward the negroes' boat. Gradually they are rounded up and forced into shallow water, where they may be caught with comparative ease. They are then thrown into the hold of the boat and taken alive to the nearest settlement, where they readily command a good price. Some young Flamingos usually reach Nassau each year. If the negro should not desire to sell his prey, it is killed and placed in brine.

Probably no known Flamingo rookery in the Bahamas escapes these disastrous visitations, and we have here, doubtless, the chief cause for the continued decrease of these splendid birds. Fortunately, I am glad to say, a representation of the requirements of the case to the acting-governor of the Bahamas seems likely to be followed by the passage of a law designed to afford Flamingos much-needed protection.

YOUNG FLAMINGOS FEEDING EACH OTHER

1. Magnolia Warbler, Male.
2. Magnolia Warbler, Female.
3. Magnolia Warbler, Young and Adult in Fall.
4. Kirtland's Warbler, Male.
5. Kirtland's Warbler, Female.

one-half natural size.

For Teachers and Students

The Migration of Warblers

SEVENTH PAPER

Compiled by Professor W. W. Cooke, Chiefly from Data in the Biological Survey

With drawings by Louis Agassiz Fuertes and Bruce Horsfall

HERMIT WARBLER

FROM its winter home in Mexico and Guatemala, the Hermit Warbler enters the United States in April, being reported from Oracle, Arizona, April 12, 1899, and the Huachuca Mountains, Arizona, April 9, 1902. Records of the first birds seen in California are Campo, April 27, 1877, and Julian, April 25, 1884. A Hermit Warbler was noted at Burrard Inlet, British Columbia, April 20, 1885.

In the fall the species has been noted as late as September 22, in Arizona, and October 9, in California.

TOWNSEND'S WARBLER

Townsend's Warbler winters principally in southern Mexico and Guatemala; a few sometimes remain, at this season, as far north as southern California. Migrants from Mexico begin to enter California, April 14 to 20. The earliest noted in 1888, at Chilliwack, B. C., was on May 19, but the usual date of arrival is probably several days earlier, for the average date of the first birds seen during five years at Columbia Falls, Mont., is May 7, varying from May 4, 1897, to May 11, 1896. First arrivals have been noted on April 9 in the Huachuca Mountains of Arizona; Loveland, Colo., May 11, 1889, and from Great Falls, Mont., May 28, 1890.

KIRTLAND'S WARBLER

This, the rarest of American Warblers, has been taken at West Jupiter, Fla., April 19 and 27; St. Helena Island, S. C., April 27 and May 3; St. Louis, Mo., May 8; Wabash, Ind., May 4 and 7; near Chicago, Ill., May 7; Rockford, Ill., May 25; Lake Koshkonong, Wis., May 24; Cleveland, Ohio, May 4, 12, 13 and 15; Ann Arbor, Mich., May 14, 15, 16 and 18; Battle Creek, Mich., May 11; Toronto, Ont., May 16; Minneapolis, Minn., May 13; Mackinac Island, Mich., May 21.

In the fall it has been noted at Fort Myer, Va., September 25, and at Chester, S. C., October 11.

The nest of this species was first discovered by Mr. Norman A. Wood in Oscoda county, Mich., July 8, 1903. (See Bull., Mich. Orn. Club, v, 1904, pp. 3–13.)

MAGNOLIA WARBLER

SPRING MIGRATION

PLACE	No. of years' record	Average date of spring arrival	Earliest date of spring arrival
Atlantic Coast—			
Atlanta, Ga. (near)	3	April 25	April 20, 1900
Washington, D. C.	4	April 30	April 22, 1891
Beaver, Pa.	5	May 5	May 2, 1899
Renovo, Pa.	8	May 7	May 2, 1903
Ballston Spa, N. Y.	5	May 9	May 4, 1891
Hartford, Conn.	6	May 10	May 9, 1892
Central Massachusetts	9	May 11	May 4, 1890
Southern Maine	6	May 10	May 6, 1899
Quebec, Can.	6	May 9	May 4, 1900
St. John, N. B.	9	May 16	May 10, 1895
Godbout, Que.	2	May 22	May 21, 1884
North River, P. E. I.	4	May 26	May 23, 1887
Mississippi Valley—			
Lower Rio Grande, Tex.			April 20, 1887
New Orleans and vicinity	5	May 3	April 26, 1903
St. Louis, Mo.	7	May 4	May 3, 1883
Morgan Park, Ill.	6	May 6	May 1, 1895
Rockford, Ill.	5	May 7	May 5, 1888
Northern Ohio	6	May 8	May 4, 1895
Southern Wisconsin	11	May 10	May 7, 1897
Southern Michigan	11	May 11	May 3, 1902
Southern Ontario	15	May 11	May 4, 1902
Parry Sound District, Ont.	11	May 13	May 6, 1895
Ottawa, Ont.	19	May 13	May 8, 1896
Lanesboro, Minn.	8	May 9	May 6, 1888
Aweme, Man.	6	May 16	May 11, 1900
Qu' Appelle, Assa			May 18, 1899
Chippewyan, Atha.			May 23, 1901
Simpson, Mack.			May 23, 1860
Denver, Colo.			May 10, 1897
Santa Barbara, Cal.			May 15, 1897

FALL MIGRATION

PLACE	No of years' record	Average date of first one seen	Earliest date of first one seen
Lanesboro, Minn.			August 12, 1887
Glen Ellyn, Ill.	6	August 22	August 12, 1896
Englewood, N. J.	3	August 23	August 16, 1887
Washington, D. C.	4	August 22	August 16, 1886
Raleigh, N. C.	3	September 13	September 11, 1889
New Orleans and vicinity	4	September 19	September 13, 1899

PLACE	No. of years' record	*Average date of last one seen	Latest date of first one seen
Aweme, Man.			September 17, 1900
Ottawa, Ont.	3	September 17	September 19, 1895
Glen Ellyn, Ill.	7	September 29	October 9, 1894
North River, B. E. I.	4	August 21	September 8, 1890
St. John, N. B.	4	September 3	September 7, 1890
Beaver, Pa.	5	September 24	October 3, 1891
Renovo, Pa.	6	September 26	October 5, 1902
Washington, D. C.	4	October 2	October 10, ——
New Orleans and vicinity	4	October 24	November 1, 1895

*Heading omitted

Report of the Circulating Collections Loaned by the American Museum of Natural History to the Public Schools of New York City, December 1, 1903, to July 1, 1904

By GEORGE H. SHERWOOD
Assistant Curator of Invertebrate Zoölogy

THE work of providing the public schools with collections to assist in nature study, which was begun in December, 1903, has been continued through the school year. In this period of six months, over one hundred collections have been in circulation, and have been used in one hundred schools in Greater New York. They have been delivered to schools in the boroughs of Manhattan, the Bronx, Brooklyn and Richmond.

For general information we have kept a record of the itinerary of each collection, and the number of pupils that have studied it in each school. These numbers are furnished by the principals over their signature. The records show that our collections were studied by the following number of pupils:—

		PUPILS
Birds	Spring . . . . 42,227 Fall 54,367	96,594
Insects		34,071
Mollusks		10,870
Minerals		10,094
Crabs		7,428
Starfish		6,523
Sponges		2,393
Total		167,973

Thus, in the six months that our collections have been in circulation they have been studied by 167,973 pupils. Their usefulness is attested by the many letters of thanks and appreciation which we have received from teachers and pupils, with the earnest request that the Museum continue this work the coming year.

The way in which the collections have been utilized in the schools is shown by the following extracts from teachers' letters:—

In one school: "The birds were used for nature lessons, and in connection with oral language, writing dictation, color and drawing lessons."

From another school comes this report: "I should say that on the average, 1,000 children have observed and examined the specimens. Miss O'Brien has been giving a short lecture before the school on the different specimens and started with the crustacea. Her talk is given weekly, and the specimens are put right into the children's hands, and are passed so each child can see for itself. She talks to eleven assembled classes, making an average of about 500 or 600 children. The teachers then have short compositions written in their class-rooms upon Miss O'Brien's talk, and in

the lower classes an oral review is made. She has lectured on crustacea, starfishes, sea urchins, sponges and corals."

The birds and insects are in great demand, as the study of them is required in several grades. There are forty collections of the former, consisting of five birds each and representing twenty species of our more common birds.

The entire expense of providing the collections and of delivering them at the schools, as well as that of transferring them from one school to another, is borne by the Museum.

Use of the collections in the vacation schools.—The usefulness of our circulating collections is shown by the demand for them in the vacation schools during the summer. In the latter part of July requests were received from a number of the nature-study teachers in the vacation schools, asking if we could loan them material for their work. Thirty-three schools were supplied with collections of birds, and ten schools with collections of insects. The collections of birds, in the four weeks which they were retained at the schools, were studied by 15,224 children; the collections of insects by 7,000 children, making a total of 22,224. Thus more than two-thirds of the vacation schools in the city were using our collections.

The total number of children that studied the collections from December 1, 1903, to September 1, 1904, was 190,197.

Bird-Lore's Fifth Christmas Bird Census

THE plan of reporting one's observations afield on Christmas Day has met with such cordial and practical endorsement by bird students throughout the country that BIRD-LORE'S Christmas Bird Census may now be considered a fixed event, which increases in interest as the accumulating records give additional material for comparison.

One of BIRD-LORE'S readers, Mr. Harold E. Porter, has very kindly compiled the appended summary of the data contained in the four preceding censuses. Reference to the February, 1901, 1902, 1903, or 1904, number of BIRD-LORE will acquaint one with the nature of the report of the day's hunt which we desire; but to those to whom none of these issues is available we may explain that such reports should be headed by a brief statement of the character of the weather, whether clear, cloudy, rainy, etc., whether the ground is bare or snow-covered, the direction and force of the wind, the temperature at the time of starting, the hour of starting and of returning. Then should be given, in the order of the A. O. U. 'Check-

List,' a list of the species seen, with exactly, or approximately, the number of *individuals* of each species recorded. A record should read, therefore, as follows:

> Yonkers, N. Y. Time, 8 A.M. to 12 M. Clear; ground bare; wind west, light; temperature 38°. Herring Gull, 75: Total,— species,— individuals.— JAMES GATES.

These records will be published in the February issue of BIRD-LORE, and it is particularly requested that they be sent the editor (at Englewood, N. J.) not later than December 28.

SUMMARY OF BIRD-LORE'S CHRISTMAS CENSUSES

	1900	1901	1902	1903
Total No. of lists	25	34	53	78
Total No. of hunters	26	41	59	87
Total per cent of men	77%	80%	90%	90%
Species seen	96	71	133	167
Best record	36 (Cal.)	24 (N.J.)	38 (Mass.)	44 (Tex.)
Lowest record	3 (N.H.)	5 (N.Y. Wis.)	0 (P.E.I)	2 (Mich.)
Warmest	+60 (Conn.)	70 (La.)	40 (S.C.)	+81 (Fla.)
Coldest	+16 (Wis.)	+32 (N.Y.)	−1 (Ill.)	0 (Wis.)
Most time	8 hrs., 45 min.	10 hrs., 10 min.	12 hrs., 18 min.	9 hrs., 30 min.
Least time	30 min.	1 hr., 30 min.	2 hrs.	30 min.
Average time	3 hrs., 25 min.	3 hrs., 45 min.	3 hrs., 40 min.	3 hrs., 35 min.
No. of states, etc., represented	14	12	19	24
Most lists from	Penna. (5)	N. Y. (10)	Mass. (10)	Mass. (14)
Most frequent species	Chickadee, 92%	Song Spar., 85%	Crow, 62%	Chickadee, 73%
Second species	Crow, 88%	Crow, 79%	Tree Spar., 61%	Tree Spar., 69%

For one year, 1900, the total number of species recorded was 96. For two years the score was 118, for three 168, and for four 229.

Of this list one was a liberated cage bird, two accidental, and three introduced species (Starling, Pheasant and European Goldfinch).

It is interesting to note that Mr. William B. Evans has, on three occasions, scored the greatest time record, and that in one of these years, 1901, he secured the best list. The increase in the per cent of men hunting is also notable.

It is gratifying to notice that scarcely a dozen records have been accorded a "?." This certainly shows that the birds are closely enough perceived to make satisfactory identification of about 99 per cent of them.— HAROLD E. PORTER.

A BIRD-HOUSE NUMBER

The next issue of BIRD-LORE will be largely devoted to the subject of bird-houses. Notes and photographs relating to this important phase of bird protection should reach us not later than December 15.

Notes from Field and Study

Balancing Robins

Perhaps the following observations on a Robin's methods of balancing will be of interest to the readers of BIRD-LORE. On February 21, 1904, a heavy sleet fell, and by the afternoon everything was so coated with ice that many of the birds found it a hard matter to secure food. Three or four hundred Robins came into the barnyard in search of food. A persimmon tree that stood near the granary where I was concealed, seemed to be the center of attack. Usually between twenty-five and fifty Robins were in this tree at once, eating the fruit and calling an occasional loud *pip*, or *piep*.

The branches of this tree were so laden with ice that the birds could not easily secure a foothold, and were continually slipping and tumbling about. I was concealed within a few yards of the tree and had a good opportunity to observe the many different methods used for maintaining a balance. When a Robin first flew into the tree he usually held both wings high over his back until he had gained a firm position, and the tail also was usually spread wide to aid him. When in danger of falling the wings were often raised only slightly and the tail spread about half-way, until the balance had been regained. Sometimes a coated persimmon was just out of reach, and then the bird would crane his neck out until in imminent danger of tumbling headlong. Then, as quick as a flash, he would thrust out a wing, and I saw them even stand in this position balancing with one wing until they were either satisfied that the fruit was not to be had or had secured it. The left and right wings were both seen to be used in this operation. The tail was sometimes used in conjunction with one or both wings, being wholly or partly spread and usually pumped up and down. As an extreme measure, when nearly falling headlong, I have seen the Robin thrust out one wing on the side of his body that was lowest, and bring it quickly forward until it was nearly on a level with his head.

Often one of the ice-coated branches would fall, and it was amusing to see the Robin who was perched thereon pick himself up, so to speak, in mid air. When the crackling of the branch was heard the birds usually flew away, but soon returned and were as busy as before. A small flock of Cedar Waxwings was engaged in the same pursuit, but I did not see one of them fall or balance himself, probably because of their lighter weight and because they were not so clumsy as the Robins.—ERNEST SEEMAN, *Greensboro, N. C.*

The European Skylark near New York City

On July 22 and 29, of this year, I had the opportunity of seeing and hearing Skylarks within an hour's journey of New York City. The birds were seen in and over extensive fields of timothy, clover, redtop and sorrel, situated about one and one-half miles northwest of Canarsie, L. I. Other birds of the immediate vicinity were Grasshopper and Vesper Sparrows and Meadowlarks, all of which breed abundantly, a pair of Great Blue Herons, a pair of Sparrow-hawks, besides a few Spotted Sandpipers, Indigo Buntings, Barn Swallows, English Sparrows and Starlings, and numerous Song Sparrows, Swifts and Chipping Sparrows.

Skylarks were heard singing almost continually, although the singer was frequently not in sight. The song must be heard to be appreciated. The bird rises from a low perch and, ascending in a very irregular spiral, pours forth a medley of notes reminding one at times of the Canary, Long-billed Marsh Wren, Bobolink and Goldfinch! The descent is much quicker than the ascent—a few turns in the spiral and then the bird rapidly descends on closed wings until within a few feet of the ground, when it spreads its wings and, after sailing

a few feet, alights. Just before it descends the bird utters, in rapid repetition, a series of notes that are almost an exact imitation of the call of the Spotted Sandpiper. One individual was observed singing while on the ground.

It was observed that the length of the bird's flights varied from one-half of one minute to more than three minutes. In England, it is said, when the sky is clear the bird will remain in the air for twenty minutes at a time.—Isaac Bildersee, *New York City*.

A Venturesome Titmouse

I have been greatly surprised at the recent performances of a Tufted Titmouse, locally called Tomtit. For several days he was noticed to be disturbing the slumbers of the house-dog (a long-haired Shepherd)—flying around him, and following him to the porch. When the dog was fast asleep the bird would make a dive at him, with sufficient force to awaken and irritate the dog. We did not immediately understand that it was the dog's hair that the bird wanted.

A member of the household followed the pair of Tomtits to a little ravine back of the house, where the trees are closely entwined with wild grape-vines—hoping to get a look at the nesting place,— making herself as inconspicuous and unmovable as possible. The Tomtit soon observed her and began to fly around her, lit several times on her shoulder, and finally gave several vigorous pulls at her hair. Yesterday two members of the household went to the spot and seated themselves some distance apart. The Tomtit soon appeared to recognize the brown costume and brown hair of his former visitor, boldly approached, lit on the young woman's back (she insists it was the same bird), braced himself, put back his head (so says the companion), and pulled with all his might at her back hair, which he succeeded in partially pulling down.—S. B. Brodhead, *Spring Station, Ky*.

A Sensible Cardinal

A pair of Cardinals built this spring in a honeysuckle at the side of a neighbor's porch. The first egg was not laid until April 17, two weeks after the nest was finished, owing to the belated spring, I suppose. The second and third eggs were laid on the following two days. On the 20th, the day after the third egg was laid, a heavy snow fell, beginning early in the morning and continuing until noon. The female retained her place on the nest until about ten o'clock, when either hunger or the unusual atmospheric conditions caused her to leave it. When she returned, perhaps fifteen minutes later, the nest was full of snow, to the brim. She exhibited signs of distress and began to eat the snow, greedily, to get rid of it. Occasionally she got on to the nest, as if to press the snow out. By evening, between eating and melting the snow with the heat of her body, the nest was clear again. After this long submergence in snow and snow-water, we all supposed, of course, that the eggs were hopelessly chilled. The mother-bird differed with us, however, and continued to incubate; and on May 1 one egg hatched.—Elmore Elliott Peake, *Salem, Ill.*

Taming a Robin

A Robin built this spring in an apple-tree of a neighbor's, about six feet from the ground. When first approached she would quietly leave the nest, but after a few trials of this kind she resolutely stuck to her post. If touched she would shrink to the further edge and peck at one's fingers. Eventually, however, she ceased to show fear, and would tamely allow herself to be stroked. Later, when the eggs were hatched, she would sit on the edge of the nest while I fed earthworms to the young, and would occasionally reach out for one herself. She would sit for fifteen minutes at a time on the edge of the nest and allow me to stroke either back or breast, and even to extend her wing its full length. Moreover, any stranger could take the same liberties. The male, however, looked with a disapproving eye on these familiarities, and kept at a distance. Such tameness may not be unusual, but it never came under my observation before.—Elmore Elliott Peake, *Salem, Ill.*

Book News and Reviews

THE HAUNTS OF THE GOLDEN-WINGED WARBLER. By J. WARREN JACOBS. Gleanings No. III. Waynesburg, Pa. 8 vo. Ills. 32 pages.

An especial interest is attached to Mr. Jacobs' bird studies. They constitute the best answer to the local ornithologist's query, "What shall I do?" with which we are familiar. In by far the larger number of cases when the resident ornithologist has published a list of the birds of his region, his subsequent contributions to knowledge consist of an occasional record of the occurrence of some rare or unexpected bird. This is all useful and interesting as far as it goes, even if it does not go very far, but, instead of being the end, it should be the beginning of one's studies of bird-life.

There remain a thousand subjects for investigation, so many, indeed, that we generally miss all our opportunities by failing to concentrate on one of them. Mr. Jacobs, however, is an exception. He has selected a field for research and devoted himself to it for several years. As a result he has given us the best account of a Martin colony which has as yet been published (see BIRD-LORE, V, p. 31), and he now issues the most complete biography of the Golden-winged Warbler extant.

It does not follow that Mr. Jacobs has enjoyed unusual opportunities for research. His success is due rather to persistent effort definitely directed; and it is perfectly safe to say that the same amount of attention intelligently devoted to the study of even the commonest species will yield equally valuable returns.

Mr. Jacobs treats at length of the haunts of the Golden-wing, its migration, sociability, nest-building, eggs, song, food and young in so interesting and satisfactory a manner that we commend his work to all students who propose to join with us in the preparation of our projected work on Warblers. In only one particular would we urge them not to follow his example. Do not rob the bird of its eggs, and at the same timey ourselves of an opportunity to study its home-life. With but few exceptions our collections contain sufficiently large series of Warblers' eggs to permit of an adequate description of their color, shape and size.

The value and novelty of Mr. Jacobs' paper consists not in his descriptions of the color and markings of the Golden-wing's eggs, but in his account of its habits; and we cannot but feel that the latter would have been better if his series of eggs had been smaller.—F. M. C.

SOME NEW FACTS ABOUT THE MIGRATION OF BIRDS. By W. W. COOKE. Yearbook of the Department of Agriculture for 1903, pages 371–386.

Professor Cooke has not only devoted many years to the study of bird migration in the field, but as an assistant in the Biological Survey he has access to an unequaled amount of migration data, as the readers of BIRD-LORE have good reason to know. His contributions, therefore, to the literature of bird migration have an especial value. The present paper is of such concentrated interest that we feel tempted to follow the example of 'The Condor' and reprint it in full; but we content ourselves by urging our readers to secure a copy of the September–October 'Condor' in which it appeared.

The causes, casualties, distances, routes, and speed of migration, how birds find their way, the relation of migration to temperature, and other significant phases of the subject are treated, and indicate the character of the paper.

"The beginnings of migration, ages ago," Professor Cooke writes, "were intimately connected with periodic changes in food supply, but this motive is at present so intermingled with others unknown, or but imperfectly known, that migration movements seem now to bear little relation to the abundance or absence of food." He believes in the existence of a "sense of direction," and states that "it is probable that

this faculty is exercised during migration." He repudiates the current belief that coast lines, mountain chains, and river courses form well-marked highways of migration, and says, "the truth seems to be that birds pay little attention to natural physical highways, except when large bodies of water force them to deviate from the desired course." The existence of a much-frequented migratory route from Florida to Cuba, and thence westward to Yucatan, is denied, it being stated that, as a matter of fact, most birds cross the Gulf of Mexico directly to Yucatan and Mexico.

Particularly valuable is that portion of Professor Cooke's paper devoted to the variations in the speed of migration, in which it is shown that with certain species "the speed increases as the birds move northward, because the advance of the seasons is more rapid in the northern interior than on and near the southern coast."

In regard to the alleged disappearance of the Chimney Swift after leaving the shores of the Gulf States, the British Museum Catalogue (xvi, p. 481) lists specimens of this species from Jalapa, Yucatan and Guatemala.—F. M. C.

A Preliminary Review of the Birds of Nebraska. With Synopses. By Lawrence Bruner, Robert H. Walcott and Myron H. Swenk. 8vo. 125 pages. Klopp & Bartlett Co., Omaha, Neb.

This list becomes at once the authoritative, standard faunal paper on Nebraska birds. The annotations are detailed and satisfactorily definite, while the introduction of analytical keys makes the work, in a measure, a text-book from which one may learn not only a bird's status but its name.

Professor Bruner's introductory paper on 'Birds in Relation to Agriculture and Horticulture,' gives due prominence to this side of ornithological research, and emphasizes the importance of the work of economic ornithologists.—F. M. C.

Catalogue of British Columbia Birds. By Francis Kermonde. Provincial Museum, Victoria, B. C. 8vo. 69 pages.

This paper will replace Fannin's 'Check-List of British Columbia Birds,' to which it adds 24 species, making a total of 363 species and subspecies which have now been recorded from British Columbia.—F. M. C.

The Ornithological Magazines

The Auk.—The October 'Auk' opens with a sketch of 'A Fortnight on the Farralones' by Milton S. Ray, and, although this bird colony has been the theme of many another pen, Mr. Ray's delightful descriptions and striking photographs are a welcome addition to the literature of the island.

Some additions to Mitchell's list of birds of New Mexico are made by Florence M. Bailey, and the balance of the magazine is devoted to birds of the South. Mr. R. W. Williams presents 'A Preliminary List of the Birds of Leon County, Florida,' Chas. R. Stockard writes on the 'Nesting Habits of the Woodpeckers and Vultures of Mississippi,' and Andrew Allison offers an annotated list of 'The Birds of West Baton Rouge Parish, Louisiana.'

We notice that Mr. Williams states that the male Red-winged Blackbird assumes, in winter, the plumage of the female. He has evidently mistaken the young males for females and not seen the black adults with the red shoulder-patches. This raises the question, Where have the adults betaken themselves,? for they are certainly conspicuous enough not to escape notice.

Notes, reviews and index carry the total number of pages for the year up to 531, the largest volume ever put in the hands of members of the A. O. U. The year 1903 will be memorable for the first discovery, in Michigan, of the nest of Kirtland's Warbler, to which reference is made at page 506. It is to be regretted that the original record did not find its way into the 'Auk,' but at page 487 Edward Arnold records from the same locality another nest taken in 1904.—J. D., Jr.

The Condor.—Since our last review two numbers of 'The Condor' have appeared, both replete with interesting notes and news. In the July-August number Mrs. Bailey describes her experience with 'A Dusky Grouse and Her Brood in New Mexico,'

Walter K. Fisher writes of 'Three Boobies Interviewed' on Laysan Island, M. French Gilman gives an account of the habits of 'The Leconte Thrasher' from observations made along the western edge of the Colorado Desert in California, and Adolph E. Schutze describes the 'Nesting Habits of the Caracara in Texas.' Under the title 'About the Utah Gull,' Rev. S. H. Goodwin calls attention to the confusion of names under which the California Gull (*Larus californicus*) has been referred to by writers on Utah birds. Mention should also be made of a paper by Loye H. Miller, who contributes an annotated list of about seventy species of birds observed in the John Day region of Oregon in 1899. The illustrations comprise a frontispiece and eleven half-tone text figures.

Nearly one-half of the September-October number is devoted to Professor W. W. Cooke's interesting paper on 'Some New Facts about the Migration of Birds,' reprinted from the Year-book of the Department of Agriculture for 1903. Rev. S. H. Goodwin describes a visit to a colony of 'Pelicans Nesting at Utah Lake,' but omits to mention the year—an unfortunate oversight in view of the statement that this was the first time the birds had nested at this place. Two hundred or more young birds were found, but only a few eggs. A. W. Johnson contributes 'Notes on Unusual Nesting Sites of the Pacific Yellow-throat,' and W. L. Finley a short paper on 'The Lutescent Warbler in Oregon.' Emerson comments on several *reported* instances of birds caring for broken legs or wings, and C. H. Richardson, Jr., presents a briefly annotated 'List of Summer Birds of the Pinte Mountains, California.'

The series of portraits of naturalists is continued with excellent likenesses of Harry C. Oberholser, in the July number, and of Mrs. Florence Merriam Bailey in the September number.—T. S. P.

Wilson Bulletin.—No. 48 of 'Wilson Bulletin' contains the following articles: 'Notes on the Holbœll Grebe,' by R. J. Sim; 'An Ornithological Reconnoissance of the Grand Reservoir, Ohio, in 1904,' by W. F. Henninger; 'July Fourth Censo-Horizons, 1904,' Lynds Jones; 'Spring Migration Along Lake Erie's Shore,' by R. J. Sim; 'Additions to the List of the Winter Birds of Wayne County, Mich.,' by B H. Swales; 'Some Barn Swallow Nests, by C. J. Hunt; 'Lawrence Warbler Breeding in Bronx Park, New York City,' by G. E. Hix; 'An Addition to the Birds of Ohio,' by Lynds Jones; 'All Day With the Birds,' Lynds Jones, and 'Some Needed Work,' Lynds Jones. Mr. Sim records some very interesting and valuable observations in relation to the habits and actions of a captive Holbœll Grebe, which he was fortunate in having the opportunity to study for a considerable length of time. The various characteristic attitudes and movements of the bird while feeding, drinking, bathing, preening, sleeping, swimming, diving, standing and walking, as well as the effect of curiosity, fear and other mental impressions upon it, were carefully noted. Lynds Jones makes some timely suggestions in 'All Day With the Birds' and 'Some Needed Work' in connection with bird study in the field. Any one who has had occasion to go beyond his own observations and experiences in search of facts touching on the life histories of birds has learned how little can be gleaned from the books on the every-day habits of our common birds. Although it is desirable to work out and describe new species and subspecies where they really exist, it would seem more commendable, however, if a greater number of our ornithologists devoted their energies to gathering facts relating to the habits of well-known forms and to leave the arduous task of species-building to its advocates.—A.K.F.

The Audubon Calendar

The Massachusetts Audubon Society Audubon Calendar for 1905 consists of six large plates of Warblers with descriptive text on the back of each plate. The price of the Calendar is 60 cents, postpaid. Special rates will be given to Audubon Societies ordering twelve or more Calendars. Address orders to the Secretary of the Society, care of the Boston Society of Natural History, Boston.

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Devoted to the Study and Protection of Birds

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

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Bird-Lore's Motto:
A Bird in the Bush is Worth Two in the Hand

THE most exacting critics of a magazine illustration are undoubtedly the artist whose drawing it reproduces and the author whose text it accompanies. It is natural, therefore, that, among the many commendations of our colored Warbler plates, which we have received during the past year, the following from Mr. Fuertes and Professor Cooke have afforded us the most pleasure and satisfaction :

"I have been surprised and gratified by the success you have achieved in reproducing the Warbler plates. I should not have supposed it possible to represent so accurately the delicate buff and chestnut tones found in some of the female and young plumages, even with more colors at your disposal. The results are, however, more than merely satisfactory, and I think you are to be congratulated for having devised so adequate a means of giving us reliable pictures of our Warblers in all their important plumages.

Very sincerely yours,
LOUIS AGASSIZ FUERTES."

"You are setting a new mark for those striving to get the best possible bird pictures. These Warbler plates are easily the best things in the line I have ever seen, and a person would have to be pretty blind that could not identify a Warbler from them. They have the combination, so hard to secure, of artistic excellence and scientific accuracy. Yours truly,

WELLS W. COOKE."

THE success which has attended the efforts of the American Museum of Natural History to make its collections of practical value to the teachers of New York City by supplying them with specimens, as reported in this number of BIRD-LORE, suggests the adoption of a similar plan by other museums and natural history societies. As far as birds are concerned, possibly the Audubon Societies might add small traveling bird collections to their circulating lectures and libraries.

Doubtless ornithologists throughout the country would donate specimens for an object of this nature, and the plan could, therefore, be carried out not only without entailing the destruction of a single bird, but it would bring into use numbers of specimens which, having been studied, are now lying idle in cabinet drawers.

For class-room use, at least in the lower grades, the birds, in our opinion, should be mounted. Wholly aside from the greater educational value of the mounted bird, a bird-skin too closely resembles a dead bird to make it desirable teaching material for children. The mounted bird, on the contrary, to the imaginative child mind, stands for the living creature, and is as much more effective than a drawing in creating a definite, realistic impression, as a doll is better than a doll's picture.

WHILE the uneducated natives of the countries in which Flamingos nest still generally believe that, when incubating, Flamingos straddle their nests with a leg dangling on each side, we had supposed that among naturalists, at least, this question was settled years ago.

We learn, however, from the October 'Ibis' that M. F. de Chapel, who observed Flamingos' nests in southern France in June, 1904, "gives measurements of the nests and the parent birds, from which he draws the conclusion that the latter sit with one leg on each side of the nest, as equilibrium would otherwise be impossible." Reference to the photograph on page 194 of this issue of BIRD-LORE and to others in 'The Century' for this month, showing hundreds of sitting birds, will emphasize the danger of "drawing conclusions."

BIRD-LORE FOR 1905

BIRD-LORE believes in expansion. It wishes to become not only a better, but a larger magazine. Many inviting opportunities for improvement and development, valuable communications, interesting photographs, are of necessity refused, and the publication of accepted contributions is often long delayed all for the same old, tiresome reason 'lack of space'—an excuse infinitely more irritating to us than to those to whom we are obliged to make it. We most earnestly hope, however, that BIRD-LORE will be found worthy of sufficient support to permit us to carry out our plans for the coming year.

PROF. T. GILBERT PEARSON, of the Normal College at Greensboro, North Carolina, who has been so remarkably successful in Audubon work in the South, has assumed the editorship of the Young Observer's Department, and under his care we are assured that this department can be made extremely attractive and stimulating to BIRD-LORE's younger readers.

MR. WITMER STONE, whose post as Conservator in the Academy of Sciences in Philadelphia, the cradle of American ornithology, is perhaps responsible for his unusually keen and sympathetic insight into the lives of early American ornithologists, will contribute to BIRD-LORE during the coming year a series of biographical sketches of these pioneer bird students. Illustrations for these articles will be supplied by Mr. Ruthven Deane, who has kindly placed his unrivaled collection of ornithologists' portraits at BIRD-LORE's disposal for this purpose.

THE February issue of BIRD-LORE, as we have previoulsy announced, will be largely devoted to articles on Bird Houses.

This number will also contain the results of the Christmas Bird Census and the list of prominent ornithologists, composing BIRD-LORE's Advisory Council, who have consented to aid bird students throughout the country with information and advice.

In succeeding issues we expect to present a paper by John Burroughs on 'Birds in Books' and also contributions from Bradford Torrey and Ernest Thompson Seton.

Prof. William Morton Wheeler has written a most interesting article on the structure of birds' wings, which, among other illustrations, will contain a restoration of the Archæopteryx by Charles R. Knight, and C. William Beebe will tell us of his experiences last winter in Mexico.

OUR files are overflowing with photographs awaiting publication, and some of them are of unusual interest, notably those of dozens of Cormorants nesting in a single tree, in North Carolina, by T. Gilbert Pearson, and a unique set recording the growth of a bird, day by day, by E. R. Warren.

BIRD-LORE's attempt to provide good, reliable colored plates of birds has not only been pronounced an artistic and scientific success, but it has brought that measure of practical endorsement which ensures the continuance of this popular feature. All the Warblers plates have been drawn, and we trust that circumstances will warrant our placing enough plates in each number of BIRD-LORE to complete the series in the next volume.

We particularly want to give Mr. Dutcher colored plates for his Educational Leaflets. Already widely used, they would have an even greater educational value if colored figures of the birds of which they treat were included in each number.

IT is also our ardent desire to publish Mr. Dutcher's Annual Report as Chairman of the National Committee of Audubon Societies in BIRD-LORE. This important document gives in detail, state by state, the work for bird protection during the year. Reports from the wardens employed, information concerning legislative, educational and other allied matters are set forth at length, and the report is not only of present interest but is valuable for reference. A single number of this report is double the size of BIRD-LORE, but we hope that during the present month our subscribers will vote so unanimously in favor of its publication that we may include it in our February issue. May we add that you will find a pink ballot placed in this number of BIRD-LORE. Vote early!

The Audubon Societies

"You cannot with a scalpel find the poet's soul,
Nor yet the wild bird's song."

Edited by MRS. MABEL OSGOOD WRIGHT and WILLIAM DUTCHER

Communications relating to the work of the Audubon and other Bird Protective Societies should be addressed to Mrs. Wright, at Fairfield, Conn. Reports, etc., designed for this department should be sent at least one month prior to the date of publication.

DIRECTORY OF STATE AUDUBON SOCIETIES

With names and addresses of their Secretaries

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The Lodging and Feeding of Birds

While it is to be hoped that the coming winter may be less severe than the last, in all but the southern states winter at best is a period of hardship for the birds, and not alone for the species that gather about dwellings, making a direct appeal to one's sympathies; but for the game-birds no less, while these last are more apt to be neglected because we of necessity see less of them.

It would be well if the secretary of each State Audubon Society could issue a postcard giving concise directions for feeding to all local secretaries and members who are school teachers, for in this way a chain of feeding stations can be established throughout the country.

This matter of feeding is not the careless affair that it seems; but in order to be effective must be conducted systematically and intelligently.

A random scattering of crumbs is not feeding birds in general; but English Sparrows in particular. Discrimination must be used, and an edged-shelf (perforated

so as to allow water to drain off) placed high enough from the ground to be out of cat-range, to hold the food. As an additional precaution, a few nails may be driven at a downward angle of 45° into the post, tree, or building upon which it rests.

This shelf should be spread with crumbs, sweepings of granary or hay-loft, cracked corn, nuts, and pounded dog-biscuits, while upright twigs of a near-by tree should be sharpened close to the trunk to hold the lumps of suet craved by all insect-eaters like the Woodpeckers, Nuthatches, Chickadees and Brown Creepers.

Protected boxes in the south side of brush-heaps or in the center of the stacks of corn-stalks left standing in fields, kept supplied with grain-sweepings or cracked corn, will make a vast difference with the Ruffed Grouse and in the Quail flocks the next spring; and if the gentleman farmer can be persuaded to sow even one-quarter of an acre of buckwheat, and leave the shocks standing to be so many field lunch-counters for the hungry game-birds that furnish him with autumnal sport, another important step will be taken on the road of Bird Protection.

Once let a community get in the habit of feeding its winter birds, and it will gain a good reputation among them, and surprising results will ensue.

Winter housing is of necessity on a different plan from the providing of family quarters for the nesting season. Cover, not privacy, is the one thing needful, and shelter from the wind is the first consideration.

On the trunk of the old apple tree that holds my bird lunch-counter a board has been fastened against which a flat-backed lantern is hung nightly. The lantern frame being of tin, a slight heat is imparted to the board, but merely enough to take the chill from it. Several winters ago I discovered that Nuthatches and Downy Woodpeckers, evidently attracted by the warmth, made their bedroom in the nooks between this flat board and the rounding side of the tree, the rough bark giving them a firm grip; while Chickadees and Juncos have been found roosting in the cow-barn just above the cattle, where the air was tempered by their warm breaths.

As an experiment I have tried utilizing boxes the size that contain one hundred pounds of laundry soap. On the front of the box a rough hood is fastened with a drop equal to half the height of the box, and perches are placed across three-fourths of the way up, with pegs like stairs placed at intervals from the bottom upward. These boxes were placed in sheltered places, under the leaves of a low building, etc.

The first season they were unoccupied, but for two years, feathers and droppings show how well they have been appreciated by birds of many kinds and sizes, and this season I am thatching two of them with straw to make the shelter more snug and attractive.

Spring is the best time for setting up winter houses, and winter the season for preparing nesting houses, as a certain amount of "weathering" is necessary to remove all suspicion from the bird's mind, which appears to be ultra-conservative and averse to newness. Above all, avoid the use of strong-smelling paints, and if you cannot obtain old weathered boards for your lodging house, be content with a dull green or brown shingle stain *not* of the creosote variety.—M. O. W.

Report of the Audubon Society of the District of Columbia for 1903–4

Commencing with October 17, 1903, a millinery exhibit was held at the Raleigh Hotel, attracting many strangers as well as residents. A bad, rainy day was against us, but, in spite of that, the show was a success. This was followed by an autumn water-party to the Great Falls of the Potomac. The day was beautiful, and birds and humans were both happy. November 10, a reception for members of the society and their friends was held at the Washington Club. Charts, literature and some good music added to the social pleasure of the evening.

Regular meetings of the society were held through the winter as follows:

December 8, 1903.—Illustrated lecture, 'A Naturalist in Mexico.' Speaker, Mr. E. W. Nelson.

January 20, 1904.—Annual Meeting. Report of the secretary and the treasurer. Lec-

Photographed by C. J. Crandall & Co.

A FIELD MEETING OF THE CALIFORNIA AUDUBON SOCIETY

ture—'A Trip into Florida,' illustrated with the most beautiful lantern-slides. Speaker, the Rev. Herbert K. Job. This lecture was delivered before a very full house and created the greatest admiration and enthusiasm.

February 9.—Regular meeting. Program: 'Birds in Song'—Miss Given. Selected poems read by Miss E. V. Brown. 'Birds in Prose'—Mrs. Wallace Radcliffe. Informal notes by members.

March 8.—Regular meeting. Topic—'Bird Protective Legislation and Methods of Enforcement, with special reference to the District of Columbia,' Dr. T. S. Palmer.

April 12.—Two lectures were given at this meeting. One on 'Migration,' by Professor W. W. Cooke. The second by Mr. Henry Oldys and called 'In Nature's Domains.'' This was most interestingly illustrated by bird notes and calls.

In April began our field meetings and bird classes. Four outdoor meetings were held, two in April and two in May.

April 8, we began our class for bird study. The subjects for these classes were: 'General Study of Birds: derivation, classification, etc.'; 'Distribution and Migration'; 'Economic Value, Nests and Eggs'; 'Bird Songs and Dances.' These classes interested about sixty persons and were most ably conducted by Mr. Henry Oldys.

Our season closed with these lectures, and we all feel that last year was our most successful period since the society was organized.

This year we have an illustrated lecture of our very own, from which we hope for further good results. The program of last year proved such a success that it is probable the same ideas will be called into use, varying only in detail and subjects for lectures and study.

JEANIE MAURY PATTEN, *Secretary*.

First Annual Meeting of the California Audubon Society

The first annual meeting of the California Audubon Society was held in a grove at Altadena, a beautiful suburb of Pasadena, on June 4, 1904, the organization at that date being but little more than two months old.

There was a large attendance of members who enjoyed a delightful day beneath the trees. The program included an address of welcome by the President, Dr. Garrett Newkirk; an interesting talk on 'Our Protected Birds,' by Professor Joseph Grinnell; recitations by Catherine Pierce Wheat and Marcia Coolidge; an address by Dr. E. L. Conger, and appropriate remarks by a number of members and visitors.

Letters of greeting and congratulation were read from Olive Thorne Miller, William Dutcher, Charles Keeler and Dr. William Rogers Lord. Promised letters from Mabel Osgood Wright and Florence Merriam Bailey were delayed in the mails and did not reach the secretary in time for the meeting. They were read, however, at a special meeting of the society a few weeks later and received with great interest and pleasure.

The report of the Secretary, submitted at the meeting, was very satisfactory and encouraging. It showed that the society had already accomplished much good in the way of bird protection and was gaining rapidly in members and influence. A county ordinance prohibiting all shooting on the public roads had been secured, a large number of warning notices and cards containing bird- and game-laws had been posted or distributed, cases of nest-robbing were under investigation and there had been one conviction for violation of the game-laws.

The California Audubon Society is making splendid headway. There are now four senior and five junior sections, with a total membership of about six hundred. Public sentiment has been aroused, especially in the interest of the protection of the Mourning Dove, and the society is receiving messages of good-will and offers of assistance from friends of the birds in all parts of the state.

The local societies will soon federate as a state organization, which will be prepared to urge the 'Model Law' at the legislative session of 1905.

W. SCOTT WAY, *Secretary*.

For Young Observers

Edited by T. GILBERT PEARSON
Address all communications for this Department to the Editor, at Greensboro, N. C.

A PERSON who has never fed the wild birds has missed a pleasure which can come in no other way. It is such a joy to give happiness to nature's untamed creatures that any one who can do so is the loser if he does not avail himself of the opportunity. In winter this can be done, probably, in no better way than by providing them with food when the natural store is low.

After the frosty nights of autumn have destroyed or put to sleep the great hordes of insect life in the fields and woods, and the snows have come and covered the seeds of the grasses and of all but the tallest weeds, there are many little hungry mouths in the land. The difficulty of finding sufficient food is often increased by the numbing effect of the fierce gales which sweep through the forests or the chilling damp from a biting sleet. These are the times of all others when food should be placed where the birds can reach it. Usually they will show their hearty appreciation by eating liberally of the supply.

On another page Mrs. Wright suggests some of the methods she has employed in feeding birds. There are so many ways of doing the same thing, however, that it would be helpful to learn how some of our Young Observers feed the birds. It would also be interesting to know the names of the feathered guests who come to the banquet spread for them.

We should, therefore, like to publish in the next number of BIRD-LORE some experiences of persons who have given food to wild birds in winter and watched them while feeding.

Three prizes are offered to the boys and girls of fourteen years or under, who send the best letter of three hundred to four hundred words on 'Feeding Birds in Winter.' The prizes will be a bird book or books to the value of $2.50 for the first prize, $2 for the second prize, and $1.50 for the third prize.

The letters should be sent to the Editor of this department, at Greensboro, North Carolina, not later than January 1, 1905, in order that the prize-winners may be announced in February BIRD-LORE.—T. G. P.

A Birds' Christmas Tree

By ELVA L. BASCOM

PERHAPS readers of BIRD-LORE will be interested in hearing of a birds' Christmas tree that added to the holiday pleasure of a household, as well as to that of its bird neighbors. The charming idea was carried out last Christmas by a family living just outside Poughkeepsie,

and a large lawn with shrubbery and trees contributed to its success. The tree was placed on the roof of a veranda and fastened to the narrow strip dividing a large double window, so that it was easily seen from the room. Festoons of pumpkin-seed strings took the place of popcorn, suet was tied to the branches in many places, and small berry-baskets, securely fastened, contained sunflower and hemp seeds and barberries. Loosely woven cord bags, resembling the traditional stocking, were filled with cracked nuts, which the birds reached through the interstices. On all the trees and shrubs around the house suet and bones were tied.

Birds were not lacking to enjoy such a royal feast. The tree was never without gusets, though morning and late afternoon brought the largest number, and the lawn was a popular resort. The company was composed of Chickadees, Juncos, Hairy and Downy Woodpeckers, Brown Creepers, Golden-crowned Kinglets, Blue Jays, Tree Sparrows, Pine Grosbeaks (in full plumage) and White- and Red-breasted Nuthatches. The Chickadees were the tamest, though one Red-breasted Nuthatch fed from his hostess' hand. One day the birds were honored with a visit from Mr. Burroughs, who came across the river to enjoy their Christmas cheer.

While such a tree might be impracticable in a city home, some features of it would no doubt be successful in attracting more worthy visitors than the English Sparrows.

Incidents of Bird Life

By GEORGE H. GILBERT (aged 11), Northampton, Mass.

ONE day when I was sent to shake rugs, the market-man drove up, and gave me a piece of suet for the birds. I took it and went out to a hemlock tree about seventeen feet from the house, and waited. Very soon a Nuthatch came and began to eat the suet which I held in my hand. Then another came to the suet, and both ate right there until they were scared by the milk-man.

Another day, a little later, as I was coming from school, the path led by a tree where there was a Chickadee. I had a piece of bread in my pocket; so I took it in my hand, and stood still. Very soon the Chickadee lit on my finger and ate the bread. I was sorry that I did not have more, and when I got back with another crumb the little fellow had flown away.

One Sunday, not long ago, we had at the suet and cracked corn: 5 Juncos, 2 Nuthatches, 1 Downy Woodpecker, 2 Goldfinches, 4 or 5 Chickadees, 3 Tree Sparrows, 3 Blue Jays and 2 Red Squirrels, all out there in ten minutes.

NATIONAL COMMITTEE OF AUDUBON SOCIETIES

EDUCATIONAL LEAFLET NO. 12

THE SHORT-EARED OWL

Order — *Raptores*

Family — *Bubonidæ*

Genus — *Asio*

Species — *Asio accipitrinus*

The Short-eared Owl

By WILLIAM DUTCHER

Chairman National Committee of Audubon Societies

DESCRIPTION

Adult Male and Female.— General aspect above black and ochraceous mixed, each feather having a dark center with an edging or other marks of ochraceous; the females averaging considerably darker than the males, both the black and ochraceous being more intense. Wings and tail dark brown, above barred with ochraceous of varying shades, the under surface of both being very markedly lighter in color. Underparts varying from almost white in the male to deep ochraceous in the female; streaked broadly on breast, and narrowly on abdomen and flanks, with dark brown. Face with a large white or very pale buff ruff and large black rings about eyes; bill and claws almost black; toes feathered to base of claws; eyes large and bright yellow in color.

Size.— Varies from 13.80 to 16.75 inches from tip of bill to end of tail.

Nest.— Is always on the ground, hidden in a tall bunch of grass or weeds, in a slight hollow not over two inches in depth. The lining of the nest is a few feathers and a small quantity of dead grass.

Eggs.— Usually from four to seven in number, white in color, usually with a faint creamy tint (Bendire).

The distribution of the Short-eared Owl is so extended that it may properly be considered one of the most cosmopolitan of all species of birds. It is found in nearly all parts of the Western Hemisphere, except portions of the West Indies; and it also inhabits the Eastern Hemisphere, except Australia. In the United States it breeds northward from about latitude 39 degrees. This species is more migratory in its habits than most of the other Owls; sometimes being found in quite large bodies, especially on the southward migration after the breeding season is over.

If all birds were named from some prominent characteristic, this species of Owl might properly be called the Marsh Owl, as it shuns the wooded districts, and is found almost exclusively in the open country — marshes, meadows, savannas, and beaches along the coast. While these Owls commonly hunt for food at night, yet they are very much more diurnal in their habits than most of the other species of Owls; and it is no uncommon occurrence to see Short-eared Owls coursing over a meadow in the daytime, especially if it is somewhat cloudy or dark, or is early or late in the day. When not hunting, they remain hidden in the tall grass or weeds, from which they will not flush very easily.

Economically, the Short-eared Owl is of the utmost value and deserves the most rigid protection. All of the evidence obtainable regarding this species indicates that its food consists almost exclusively of noxious animals, with some insects. Referring to Bulletin No. 3, United States Department of Agriculture, it is stated: "Fully 75 per cent of the stomachs examined contain mice. The remains of as many as six of these little mammals were found in one stomach, and several contained three or four each. Of the other mammals which this Owl feeds upon may be mentioned shrews, gophers, and sometimes small rabbits. In one specimen a pellet ready for regurgitation contained ten nearly perfect skulls of shrews." The same character of testimony comes from both Europe and Asia, for in Yarrell's

'British Birds' it is stated "that when plagues of mice occur Owls throng to the spot, rendering the greatest service in extirpating the pests." Undoubtedly the Short-eared Owls prey to a very limited extent upon small birds; but the percentage of harm is so small, when compared with the good the Owls do, that it should not be taken into account. Their regular and principal food is noxious mammals, with some beetles, locusts and other insects, and an occasional bird. It is a very well-authenticated fact that in large game-preserves, where Hawks and Owls are shot to the point of extermination, the inevitable result is an abnormal increase in rats and mice, even to the extent of a plague.

On one occasion the writer kept a Short-eared Owl in captivity for about a month, in order to study its habits. It was confined in a large box with a wire front, at first in the open air and, subsequently, in a light cellar. Every effort was made to tame its wildness, by handling it with the greatest gentleness and never approaching it abruptly. No measure of success attended the effort; on the contrary, the Owl seemed to grow wilder and more excitable when approached. A visitor was always saluted with a series of violent hisses, accompanied by a ruffling of the feathers over the whole body. The hisses were often followed by a violent snapping of the mandibles, which was continued for some time, especially if food were not given. If the visit were in the daytime, the exhibitions of fear or temper were much more violent than at night. This may be accounted for from the fact that at night the Owl was dazzled by a bright light being held within a few inches of the cage. If the light were moved from end to end of the cage the eyes of the Owl always followed it, thus showing that the light was a much stronger attraction than the visitor; however, the light was by no means so absorbing that it prevented the Owl from seizing food when presented, if hungry; if not hungry, no attention would be paid to anything but the flame. If food were seized it was merely held by the claws until the light was removed. It was also one of the Owl's habits to hold surplus food with one foot when its hunger was satisfied. On a number of occasions a surfeit of house-mice was offered, but the Owl would not eat to exceed more than three mice at one time.

Once the process of disgorging a pellet was observed. The Owl was about to be fed, when it commenced a series of contortions which seemed to involve the whole body. Three of these movements or contortions took place, then a pellet was thrown from the Owl's mouth. It was nearly two inches long, and about three-quarters of an inch at its greatest diameter. It was covered with a slimy substance which made it very slippery. The pellet dried quickly, when no trace of any greasy substance was found, and it is therefore probable that the lubricating matter must be lodged in the throat and stomach of the Owl and is only used in small quantities on the surface of the pellet, not being mixed with the whole mass.

The feeding habits of Asio were very interesting and repaid the labor of securing his daily fare of mice, which was the favorite food; raw beef or other meat was refused unless the Owl were very hungry. At first only such food was taken as was thrown into the cage, and then only when the Owl was left alone; but after about ten days' captivity, food was taken from the hand, if the bird were very hungry, but not otherwise. The Owl would look at the proffered meal, first with one eye and then with the other, and finally with a stroke, as quick as a flash of lightning, would catch the food with a foot, usually the left one, but never with the bill; almost instantly the food would be transferred from the foot to the bill. The two movements were sometimes so quickly made that it was impossible to follow them with the eye. Mice, no matter how large, were invariably swallowed whole, tail first. Before eating an English Sparrow a portion of the plumage was removed; first the large feathers of the wings and tail were pulled out, together with some from the back. All the smaller and softer feathers were swallowed. The head was eaten first, followed by the soft portions of the body and finally the breast and wings. All the bones were swallowed, as well as the legs and feet..

An attempt was made to associate a Screech Owl in the same cage with the Short-eared Owl, but it proved decidedly unsuccessful and it was impossible to determine which of the two Owls was the most frightened. The Screech Owl crouched in one corner of the cage and uttered a series of low whistles, while the larger bird jumped from end to end of the cage in a frantic manner, hissing and snapping its bill. Peace and quietness was maintained only by a separation of the thoroughly frightened Owls. Shortly after this both Owls were taken at night to a clump of pines in Central Park, New York City, where they were liberated, and the last seen of them was their shadowy forms disappearing in the dim light of the stars twinkling through the arches of the grove.

Study Points for Teachers and Students

Trace distribution of the Short-eared Owls on the map. Give some of the life-history of Short-eared Owls based on your own observations. What are Shrews? Gophers? What is the meaning of Ochraceous? Cosmopolitan? Diurnal? Regurgitation? Mandibles?

For additional valuable information regarding the Short-eared Owls, consult the reference books named in Leaflet No. 8, also "Observations on Owls, with Particular Regard to their Feeding Habits," American Naturalist, July, 1899.

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