



12106(-3)
12107
B 3
4

FOR THE PEOPLE
FOR EDUCATION
FOR SCIENCE

LIBRARY
OF
THE AMERICAN MUSEUM
OF
NATURAL HISTORY

BY GIFT OF
ALBERT S. BICKMORE
AND
CHARLOTTE B. BICKMORE

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



VOLUME I—1899

THE MACMILLAN COMPANY
ENGLEWOOD, N. J., AND NEW YORK CITY

COPYRIGHT, 1899

By FRANK M. CHAPMAN

11. 27. 1914. S. H. W.

INDEX TO ARTICLES IN VOLUME I BY AUTHORS

- Allen, J. A., The American Ornithologists' Union, 143.
- Babcock, C. A., 'Suggestions for Bird-Day Programs in the Schools,' 49.
- Baily, William L., 'Three Cobb's Island Pictures,' 81.
- Batchelder, Annie V., Sec'y, report of, 102.
- Beal, F. E. L., Reviews by, 98, 133.
- Beebe, C. Will., 'Two Nova Scotia Photographs,' 113.
- Board, Nellie S., Sec'y, report of, 62.
- Brown, Elizabeth V., 'A Bird-Day Program,' 52. [pecker,' 60.
- Burnet, Dr. D. L., 'A Musical Wood-Burroughs, John, 'In Warbler Time,' 3.
- Butler, Amos W., Sec'y, report of, 66.
- Chapman, Frank M., 'Birds Through a Telescope,' 132; 'Gannets on Bonaventure,' 71; 'The Legend of the Salt,' 55; 'The Passing of the Tern,' 295; 'The Surprising Contents of a Birch Stub,' 187; editorials by, 2, 28, 63, 135, 169, 201; photographs by, 119, 149; reviews by, 26, 27, 61, 97, 98, 133, 167.
- Collins, H. M., 'The Peculiarities of a Caged Skylark,' 157.
- Cram, William Everett, 'Winter Bird Notes from Southern New Hampshire,' 180.
- Crolius, A. A., 'How the Central Park Chickadees Were Tamed,' 185. [78.
- Day, Mary F., 'Home-Life in a Chimney,'
- Deane, Ruthven, President, report of, 66.
- Dutcher, William, 'Loons at Home,' 40.
- Eaton, Isabel, 'Bird Studies for Children,' 17.
- Fisher, Dr. A. K., 'Average Dates of Arrival of the Commoner Birds at Sing Sing, N. Y., during April and May,' 54.
- Geery, D. R., 'Sparrow Proof Houses,' 60.
- Glover, Harriet D. C., Sec'y, report of, 31.
- Glover, Helen W., Sec'y, report of, 139.
- Grant, Annie M., Sec'y, reports of, 30, 204.
- Hegner, Robert W., 'Photographing a Bluebird,' 43; 'The Prairie Horned Lark,' 152.
- Hodge, C. F., 'A Pleasant Acquaintance With a Hummingbird,' 155; 'On the Ethics of Caging Birds,' 158.
- Horack, Frank E., 'The Songs of Birds,' 96; 'A Singing Bluejay,' 197.
- Ives, Ella Gilbert, 'The Cardinal at the Hub,' 83; 'The Cardinal in Maine,' 132.
- Judd, Sylvester D., Ph. D., 'Collecting a Brown Thrush's Song,' 25.
- Kearton, R., 'Photographing Shy Wild Birds and Beasts at Home,' 107.
- Kendall, Blanche, photographs by, 84, 85, 86.
- Kennard, Fred. H., 'A May Morning,' 91.
- Lehmann, Lilli, A Message from, 103.
- Lemmon, Isabella McC., 'Oliver Twist, Catbird,' 163.
- Lockwood, Emma H., Sec'y, report of, 32.
- Loring, J. Alden, 'Inquisitive Magpies,' 96.
- Mellick, Mary A., Sec'y, report of, 32.
- Menke, H. W., 'From a Cabin Window,' 14; photograph by, 106.
- Merriam, Florence A., 'Clark's Crows and Oregon Jays on Mount Hood,' 46, 72; 'Our Doorstep Sparrow,' 20.
- Miller, Oliver Thorne, 'On the Ethics of Caging Birds,' 19, 89.
- Mumma, Rosa Meyers, 'Matins,' 77.
- Nash, H. W., photograph by, 176.
- Newkirk, Garrett, 'Mr. Flicker Writes a Letter,' 129; 'Robin Rejoice,' 95; 'The Little Brown Creeper,' 197.
- Noble, Floyd C., 'A February Walk in Central Park,' 57.
- Osgood, Fletcher, report of, 137.
- Patten, Mrs. John Dewhurst, Sec'y, reports of, 32, 173.
- Peabody, P. B., 'Richardson's Owl,' 190.
- Peckham, Mrs. Elizabeth W., Sec'y, reports of, 101, 205.
- Prinzelhorn, A. L., photograph by, 154.
- Richards, Harriet E., Sec'y, report by, 30.
- Roberts, Dr. Thos. S., 'The Camera as an aid in the Study of Birds,' 6, 35; 'A Catbird Study,' 87.

- Robins, Julia Stockton, Sec'y, report of, 66, 204. [94.]
- Robinson, Mildred A., 'A February Walk,' Roosevelt, Theodore, Letter from, 65.
- Royael, John L., 'An Accomplished House Sparrow,' 24.
- Russell, Miss Cora, Sec'y, report of, 32.
- Sage, John H., 'Fall Migration at Portland, Conn.,' 128.
- Schwab, L. H., 'An Odd Nesting Site,' 166.
- Slosson, Annie Trumbull, 'A Tragic St. Valentine's Day,' 45.
- Smith, Anna Harris, 'On the Ethics of Caging Birds,' 160.
- Smith, W. Gordon, photograph by, 177.
- Soule, Caroline G., 'Birds and Caterpillars,' 166; 'Humanizing the Birds,' 193.
- Southwick, E. B., 'A Nuthatching Nuthatch,' 24.
- Stone, Witmer, 'A Search for the Reedy Island Crow Roost,' 177.
- Stone, Witmer, and others, 'Hints to Young Bird Students,' 125.
- Tabor, E. G., 'A Least Bittern Portrait,' 39; photographs by, 149, 156.
- Taylor, John W., President, report of, 67.
- Thomas, Edith M., 'The Masquerading Chickadee,' 77.
- Thompson, Ernest Seton, 'The Myth of the Song Sparrow,' 59.
- Torrey, Bradford, 'Watching the Bittern Pump,' 123.
- Tyler, D. T. A., Audubon's Seal, 172.
- Van Altena, Edward, photograph by, 116.
- Van Dyke, Henry, 'The Angler's Reveille,' 150.
- Van Sant, Florence A., 'Zip and Phœbe, A Catbird Story,' 130.
- Widmann, Otto, 'In the Spartina with the Swallows,' 115.
- Webster, Ellen E., 'An Interesting Phœbe's Nest,' 197.
- Wood, George, photograph by, 21.
- W[right] M. O., Editorials by, 29, 64, 100, 136, 170, 202.

INDEX TO VOLUME I

- A Dictionary of Birds, reviewed, 199.
- Adney, Tappan, 202.
- Advisory Council, 192.
- Allen, J. A., 127, 142, 144, 169.
- Aldrich, Chas., 142.
- American Ornithologists' Union, 142, 143, 169.
- Audubon Bird Chart, 27.
- Audubon Calendar, 200.
- Audubon Societies, reports of. See under names of Secretaries.
- Auk, The, 146, 147.
- Babcock, C. A., 62.
- Bailey, H. B., 142.
- Baird, S. F., 142.
- Baldpate, 128.
- Ball, Helen A., 167.
- Barlow, Chester, 62, 168.
- Bartsch, Paul, 200.
- Batchelder, C. F., 142.
- Beal, F. E. L., 134.
- Belding, Lyman, 146.
- Bendire, C. E., 142.
- Bicknell, E. P., 142.
- Bickmore, Professor, 32.
- Bird Collecting, 135, 168.
- Bird-Day, 36, 49, 51, 53, 98.
- Bird Games, 18.
- 'Bird Gods,' reviewed, 26.
- Bird Houses, figured, 60.
- 'Bird-Life: A Guide to the Study of our Common Birds,' Teachers' edition, reviewed, 27.
- Bird-Lore, 28, 63, 201.
- 'Bird Migration in Mississippi Valley,' 146.
- 'Birds,' reviewed, 97.
- Birds and Farmers, 103.
- 'Birds as Weed Destroyers,' reviewed, 134.
- Birds' Christmas Tree, 195.
- 'Birds of Washington and Vicinity,' reviewed, 26.
- Birds, Food for, 19.
- Birds, Songs of, 96.
- 'Birds Through an Opera-glass,' 168.
- Bittern, American, 54, 123, 128; figured, 149; Least, 39, 40, 123, 128; figured, 34.
- Blackbird, Red-winged, 92, 96, 128; Rusty, 128; Yellow-headed, 16; figured, 16.

- Bluebird, 43, 150; figured, 43, 44.
 Bobolink, 55, 92, 117, 128.
 Boynton, Helen M., 98.
 Brewster, William, 27, 127, 142, 144, 202.
 British Columbia, 98.
 Brooks, William R., 132.
 Brown, Elizabeth V., 173.
 Brown, Nathan C., 142.
 Brownell, L. W., 63.
 Bunting, Indigo, 55, 128.
 Burroughs, John, 2, 5, 202.
 California, 62.
 Campbell, A. J., 202.
 Camera, 6, 35, 107, 202.
 Canada, 40, 133, 171.
 Canary, 17, 89, 96.
 Cardinal, 57, 83, 132; figured, 84, 85, 86.
 Catbird, 54, 91, 128, 163, 166; figured, 87, 88.
 Cedarbird, 92, 166; figured, 161.
 Chamberlain, M., 142.
 Chapman, Frank M., 26, 31, 32, 127, 202.
 Chat, Yellow-breasted, 55.
 Chautauqua Literary and Scientific Circle, 168.
 'Check-list of British Columbia Birds,' reviewed, 98.
 Check-list of North American Birds, 147.
 Chickadee, Black-capped, 9, 10, 11, 19, 24, 56, 58, 77, 94, 97, 181, 182, 185, 187; figured, 7, 10, 12, 13, 56, 189.
 Clark, Josephine A., 62.
 Code of Nomenclature, 145.
 Cohen, Donald, 62.
 Connecticut, 27, 128, 166.
 Cooke, W. W., 146.
 Cooper Ornithological Club, 62.
 Coot, American, 128.
 Cormorants, Double-crested, 71.
 Cory, C. B., 142.
 Cones, Elliott, 135, 142, 144.
 Coues' 'Key,' 98.
 Cowbird, 54, 93, 128.
 Creeper, Brown, 57, 128, 181, 195; figured, 195.
 Crow, 92, 164, 177, 181, 184; figured, 177, 184.
 Crow, Fish, 54.
 Crow, Clark's, 46, 72; figured, 47, 72, 74, 76.
 Cuckoo, Black-billed, 55, 93, 128, 166; Yellow-billed, 55, 128, 166.
 Dart, Leslie O., 10.
 Davis, W. T., 200.
 Dearborn, Ned, 98.
 De Kay, Charles, 26.
 Delaware, 179.
 Dickey Downy, reviewed, 200.
 Diver, Great Northern, 40.
 Dove, Mourning, 128.
 Duck, American Scaup, 128; Black, 128; Buffle-head, 128; Lesser Scaup, 128; Ring-necked, 128; Ruddy, 128.
 Dutcher, William, 103, 127.
 Eagle, 26.
 Eagle, Bald, 170, 171, 181; Golden, figured, 176.
 Eckstorm, Fannie Hardy, 98.
 'Economic Relations of Birds and Their Food,' noticed, 134.
 Edwards, George Wharton, 26.
 Egg Collecting, 61.
 Elliot, D. G., 142.
 Evans, A. H., 97.
 Fannin, John, 98.
 February Walk Contest, 57.
 'Field Key to the Land Birds,' reviewed, 167.
 Finch, Purple, 54.
 Fisher, A. K., 127, 142.
 Flicker, 18, 128, 181.
 Florida, 45, 63.
 Flycatcher, Alder, 55; Crested, 55; Green-crested, 55; Least, 54, 128; Olive-sided, 55; Yellow-bellied, 55.
 Gadow, Hans, 199.
 Gannets, 70; figured, 70.
 Gill, Theodore, 135.
 Gleeson, Joseph M., 199.
 Goldfinch, 17, 183; European, 58.
 Goose, Canada, 128, 181.
 Goshawk, American, 128, 180.
 Grackle, Bronzed, 128.
 Grant, Annie M., 133.
 Grebe, Pied-billed, 54, 128.
 Grinnell, George Bird, 146.
 Grosbeak, Pine, 183; Rose-breasted, 55, 92, 128, 166.
 Grouse, Blue, 46.
 Gull, Herring, 71.
 Harvey, L. D., 98.
 Hawk, Cooper's, 128; Marsh, 128; Pigeon, 54, 128; Rough-legged, 181; Sharp-shinned, 128; Sparrow, 54.

- Henshaw, H. W., 142, 202.
 Heron, Black-crowned Night, 54, 128;
 Green, 54, 92, 128; Great Blue, 128.
 Hodge, C. F., 161, 162, 167.
 Hoffmann, Ralph, 27, 30.
 Holder, J. B., 142.
 Hornaday, W. T., 31.
 Hornbrooke, Orinda, 102.
 Howe, Reginald Heber, Jr., 134.
 Hubbard, Marion C., 202.
 Hummingbird, 55, 128, 155; nest of,
 figured, 156.
 Iowa, 43, 152.
 Jay, Blue, 96, 181; Oregon, 46, 72; figured,
 48, 72, 73, 75; Stellers', 46.
 Jones, Lynds, 27, 168, 202.
 Judd, Sylvester D., 134.
 Junco, 19, 113, 128, 183; nest of, figured,
 113; Oregon, 46.
 Kearton, C., 26, 133.
 Kearton, Richard, 26, 133.
 Killdeer, 35; figured, 36, 38.
 Kingbird, 39, 55, 92, 128.
 Kingfisher, 54, 128.
 Kinglet, Golden-crowned, 128, 181; Ruby-
 crowned, 3, 46, 54, 128.
 Knight, O. W., 62.
 Knobel, E., 30, 167.
 Lacey-Hoar Bird Bill, 63.
 Land Birds of Pacific District, 146.
 Lark, Horned, 15, 180; figured, 14, 15;
 Prairie Horned, 152; figured, 152, 153.
 Lawrence, Geo. M., 142.
 'List of Birds of Belknap and Merrimac
 Counties,' reviewed, 98.
 Lodge, G. E., 97.
 Loon, 40, 41, 128; nest and eggs of,
 figured, 42; Red-throated, 128.
 Lucas, F. A., 200, 202.
 Magpie, 96.
 Maine Ornithological Society, 62.
 Mallard, 128.
 Martin, European, nest and young of,
 figured, 122; Purple, 54, 120, 128.
 Maryland Yellow Throat, 55, 151.
 Massachusetts, 27, 83, 91, 134.
 Maynard, C. J., 62.
 Maynard, Mrs. L. W., 25.
 McCormick, A. I., 62.
 McCormick, L. M., 202.
 Meadowlark, 92, 128, 183.
 Mearns, E. A., 142, 202.
 Merganser, Hooded, 128; Red-breasted,
 128.
 Merriam, C. Hart, 127, 142, 145, 146,
 169, 202.
 Merriam, Florence A., 26, 31, 173, 202.
 Migration, 54, 128, 145, 169.
 Miller, Olive Thorne, 32, 62, 158, 159, 160,
 167, 202.
 Minnesota, 10, 67, 190.
 Missouri, 27, 115.
 Morrill, C. H., 62.
 Nash, Charles W., 133.
 Nature Study, 51, 62, 193.
 Nehrling, H., 27.
 Nests, 19.
 Nest-building, 50.
 Nest-holder, 197.
 New Hampshire, 98, 180.
 New Jersey, 78, 116, 119, 128, 132, 177,
 187.
 Newton, Alfred, 199.
 Newton, Dr. Heber, 31.
 New York, 5, 39, 54, 55, 57, 132, 134, 149,
 156.
 Nighthawk, 55, 128; figured, 114.
 Nova Scotia, 113.
 Nutcracker, 46, 72.
 Nuthatch, Red-breasted, 128, 182; White-
 breasted, 24, 58, 94.
 Nuttall 'Bulletin,' 143, 144.
 Nuttall Ornithological Club, 143.
 Oberholser, H. C., 173, 200.
 Ohio, 27.
 Olds, Henry, 173.
 Old-squaw, 128.
 'On the Birds' Highway,' reviewed, 134.
 Oregon, 46, 72.
 Oriole, Baltimore, 55, 91, 128; Orchard, 55.
 Osprey, 54, 128.
 'Our Animal Friends,' 168.
 'Our Common Birds,' reviewed, 167.
 Ovenbird, 55, 128.
 Owl, Barred, 117; Richardson's, 190;
 figured, 190, 191; Saw-whet, 182;
 Screech, figured, 154; Short-eared, 128;
 Snowy, 128, 180; figured, 181.
 Palmer, Alice Freeman, 102.
 Palmer, T. S., 32, 127, 134, 173.
 Parkhurst, H. E., 200.
 Patterson, Virginia Sharpe, 200.
 Pelican, Brown, 169, 171.
 Pewee, Wood, 55, 92, 128.

- Phoebe, 128, 130
 Phonograph, 25.
 Pinchot, Professor, 202.
 Pintail, 128.
 Pipit, American, 128.
 Plover, American Golden, 128.
 Prentiss, D. W., 142.
 Purdie, H. A., 142.
 Quail, 91, 93.
 Quills to Avoid, figured, 169, 171.
 Quincy, Josiah, Mayor, 137.
 Rail, Yellow, 128; Virginia, 128.
 Razor-bill, 81.
 Redstart, 55, 93, 128.
 Reynaud, Capt., 202.
 Rhode Island, 134.
 Richards, Harriet E., 102.
 Richmond, C. W., 27, 127, 200.
 Ridgway, Robert, 32, 127, 142, 200, 202.
 Roberts, T. S., 202.
 Robertson, Howard, 62.
 Robin, 17, 32, 50, 128, 150, 166; figured
 on nest, 95.
 Robinson, Lieut. Wirt, 21.
 Robinson, Mildred A., 57.
 Rowley, John, 202.
 Rubbish Heap, Artificial, 109.
 Sage, J. H., 27.
 Sandpiper, Least, 55, 128; Pectoral, 128;
 Semipalmated, 128; Solitary, 55, 128.
 Sapsucker, Yellow-bellied, 54, 128.
 Scoter, American, 128; Surf, 128; White-
 winged, 128.
 Sennett, George B., 198.
 Sharpe, R. Bowdler, 61.
 Shrike, Northern, 6, 128, 181.
 Shufeldt, R. W., 142. [61.
 Sketch Book of British Birds, reviewed,
 Skimmer, Black, figured, 81; nest and
 eggs of, figured, 82.
 Skylark, 157.
 Siskin, Pine, 128.
 Slab-Sides, 5.
 Snipe, Wilson's, 54, 128.
 Snow Buntings, 180, 300.
 Snowflake, 141, 128; figured, 14, 15.
 Solitaire, Townsends, 47.
 Sparrow, Chipping, 20, 54, 97, 166;
 figured, 21; English, 17, 49; Field, 54,
 93, 128; Fox, 128; Henslow's, 117, 118;
 House, 24; Lincoln's, 128; Nelson's,
 128; Savanna, 54; Song, 58, 92, 128;
 figured, 59; Swamp, 54, 92, 128; Tree,
 19, 128, 181; Vesper, 54; White-
 crowned, 47, 55, 128; White-throated,
 54, 57, 128; Yellow-winged, 55; Spar-
 row War, 137.
 Stake-driver, 124.
 Starling, 57.
 Stejneger, Leonhard, 195. [200.
 Stone, Witmer, 27, 28, 29, 61, 125, 127,
 Swallow, Bank, 54, 120, 128; Barn, 54,
 92, 128; Cliff, 55, 128; nests of, figured,
 106; Eave, 115, 118, 119, 120; Rough
 Wing, 55, 115, 119, 120; Tree, 45, 54,
 115; figured, 116, 119, 121; White
 Breast, 115, 118, 119, 120.
 Swan, 26.
 Swift, Chimney, 54, 78, 92, 128.
 Tanager, Scarlet, 55, 128.
 Tatlock, John, Jr., 132.
 Taylor, Henry Reed, 62. [128.
 Teal, Blue-winged, 128; Green-winged,
 Tern, Gull-billed, 82; figured, 82; Wil-
 son's, 205; figured, 206.
 Thayer, Abbott, 200.
 'The Birds of Eastern North America,'
 reviewed, 200.
 'The Birds of Ontario in Relation to
 Agriculture,' reviewed, 133.
 'The Danger of Introducing Noxious
 Animals and Birds,' noticed, 134.
 'The Feeding Habit of the Chipping
 Sparrow, and the Winter Food of the
 Chickadee,' reviewed, 97.
 'The First Book of Birds,' reviewed, 167.
 'The Osprey,' 135.
 Thompson, Ernest Seton, 27, 62, 134, 202.
 Thrasher, Brown, 25, 54, 91, 128, 151.
 Thrush, Gray-cheeked, 55, 128; Hermit,
 54, 128; Olive-backed, 55, 128; Wil-
 son's, 55, 128; Wood, 54, 92, 128.
 Torrey, Bradford, 202.
 Towhee, 54.
 Tree Trunk, Artificial, 108
 Tryon, Kate, 31.
 Van Dyke, Dr. Henry, 31.
 Van Name, Willard G., 31.
 Veery, 55, 128.
 Vermont, 166.
 Vireo, Blue-headed, 54, 128; Philadelphia,
 128; Red-eyed, 55, 91, 128, 166; Yel-
 low-throated, 55, 93, 128; Warbling, 55,
 128, 166; White-eyed, 55, 91, 95, 166.

- Virginia, 81, 206.
- 'Wabeno, the Magician,' reviewed, 199.
- Warbler, Bay-breasted, 55, 128; Black and White, 5, 54, 93, 128; Blackburnian, 55, 128; Blackpoll, 5, 55, 93, 128; Black-throated Blue, 55, 128; Black-throated Green, 4, 55, 128; Blue-winged, 3, 55; Canadian, 55, 128; Chestnut-sided, 4, 55, 92; Connecticut, 128; Golden Swamp, 11; Golden-winged, 4, 55, 92; Kentucky, 55; Magnolia, 55, 128; Mourning, 55; Myrtle, 54, 128; Nashville, 55, 128; Parula, 55, 128; Pine, 128; Prairie, 128; Prothonotary, 10; Tennessee, 55; Wilson's, 55, 128; Worm-eating, 55; Yellow, 55, 92, 128; Yellow Palm, 41, 54, 128.
- Water-Thrush, Large-billed, 54; Small-billed, 55, 128.
- Wheaton, J. M., 142.
- Whip-poor-will, 55, 128.
- Widmann, Otto, 27, 202.
- 'Wild Animals I Have Known,' 62, 134.
- 'Wild Life at Home: How to Study and Photograph It,' reviewed, 133.
- Willcox, M. A., 200.
- Wilson Bulletin, 168.
- Wisconsin, 27.
- Wisconsin Arbor and Bird Day Annual, 98.
- 'With Nature and a Camera,' reviewed, 26.
- Woodcock, 128, 166.
- Woodpecker, 19, 26; Downy, 11, 58, 60, 166, 181; Lewis, 47, 72.
- Wren, House, 54, 128, 166; Long-billed Marsh, 39, 55; Short-billed Marsh, 117, 128; Winter, 128, 181.
- Wright, Mabel Osgood, 30, 31, 195, 202.
- Wyoming, 14, 106.
- Yellow-bird, Summer, 17.
- Yellow Hammer, 18.
- Yellow-legs, Greater, 128.



JOHN BURROUGHS AT 'SLAB SUDES'
Flashlight photograph, by F. M. Chapman, October, 1896

Bird = Lore

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

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. 1

FEBRUARY, 1899

No. 1

In Warbler Time

BY JOHN BURROUGHS



THIS morning, May 5, as I walked through the fields the west wind brought to me a sweet, fresh odor, like that of fragrant violets, precisely like that of our little white sweet violet (*Viola blanda*). I do not know what it came from,—probably from sugar maples, just shaking out their fringe-like blossoms,—but it was the first breath of May, and very welcome. April has her odors, too, very delicate and suggestive, but seldom is the wind perfumed with the breath of actual bloom before May. I said it is Warbler time; the first arrivals of the pretty little migrants should be noted now. Hardly had my thought defined itself when before me, in a little hemlock, I caught the flash of a blue, white-barred wing; then glimpses of a yellow breast and a yellow crown. I approached cautiously, and in a moment more had a full view of one of our rarer Warblers, the Blue-winged Yellow Warbler. Very pretty he was, too, the yellow cap, the yellow breast, and the black streak through the eye being conspicuous features. He would not stand to be looked at long, but soon disappeared in a near-by tree.

The Ruby-crowned Kinglet was piping in an evergreen tree near by, but him I had been hearing for several days. The Kinglets come before the first Warblers, and may be known to the attentive eye by their quick, nervous movements, and small greenish forms, and to the discerning ear by their hurried, musical, piping strains. How soft, how rapid, how joyous and lyrical their songs are! Very few country people, I imagine, either see them or hear them. The powers of observation of country people are not fine enough and trained enough. They see and hear coarsely. An object must be big and a sound loud, to attract their attention. Have you seen and heard the Kinglet? If not, the finer inner world of nature is

a sealed book to you. When your senses take in the Kinglet they will take in a thousand other objects that now escape you.

My first Warbler in the spring is usually the Yellow Redpoll, which I see in April. It is not a bird of the trees and woods, but of low bushes in the open, often alighting upon the ground in quest of food. I sometimes see it on the lawn. The last one I saw was one April day, when I went over to the creek to see if the suckers were yet running up. The bird was flitting amid the low bushes, now and then dropping down to the gravelly bank of the stream. Its chestnut crown and yellow under parts were noticeable.

The past season I saw for the first time the Golden-winged Warbler—a shy bird, that eluded me a long time in an old clearing that had grown up with low bushes. The song first attracted my attention, it is so like in form to that of the Black-throated Green Back, but in quality so inferior. The first distant glimpse of the bird, too, suggested the Green Back, so for a time I deceived myself with the notion that it was the Green Back with some defect in its vocal organs. A day or two later I heard two of them, and then concluded my inference was a hasty one.

Following one of the birds, I caught sight of its yellow crown, which is much more conspicuous than its yellow wing-bars. Its song is like this, 'n-'n de de de, with a peculiar reedy quality, but not at all musical, falling far short of the clear, sweet, lyrical song of the Green Back.

One appreciates how bright and gay the plumage of many of our Warblers is, when he sees one of them alight upon the ground. While passing along a wood road in June, a male Black-throated Green came down out of the hemlocks and sat for a moment on the ground before me. How out of place he looked, like a bit of ribbon or millinery just dropped there! The throat of this Warbler always suggests the finest black velvet. Not long after I saw the Chestnut-sided Warbler do the same thing. We were trying to make it out in a tree by the roadside, when it dropped down quickly to the ground in pursuit of an insect, and sat a moment upon the brown surface, giving us a vivid sense of its bright new plumage.

When the leaves of the trees are just unfolding, or, as Tennyson says, "When all the woods stand in a mist of green, and nothing perfect," the tide of migrating Warblers is at its height. They come in the night, and in the morning the trees are alive with them. The apple trees are just showing the pink, and how closely the birds inspect them in their eager quest for insect food! One cold, rainy day at this season Wilson's Black-cap,—a bird that is said to go north nearly to the arctic circle,—explored an apple tree

in front of my window. It came down within two feet of my face, as I stood by the pane, and paused a moment in its hurry and peered in at me, giving me an admirable view of its form and markings. It was wet and hungry, and it had a long journey before it. What a small body to cover such a distance!

The Black-poll Warbler, which one may see about the same time, is a much larger bird and of slower movement, and is colored much like the Black and White Creeping Warbler with a black cap on its head. The song of this bird is the finest, the least in volume, and most insect-like of that of any Warbler known to me. It is the song of the Black and White Creeper reduced, high and swelling in the middle and low and faint at its beginning and ending. When one has learned to note and discriminate the Warblers, he has made a good beginning in his or her ornithological studies.

John Burroughs at 'Slab Sides'

SOME years ago a favor to a neighbor resulted in Mr. Burroughs acquiring possession of a small 'muck swamp' situated in a valley in the hills, a mile or more west of his home at West Park, on the Hudson. To Mr. Burroughs, the agriculturist, this apparently worthless bit of ground promised a rich return after it had yielded to successive attacks of brush-knife, grubbing-hook, plough, and spade. To Burroughs, the literary naturalist and nature-lover, this secluded hollow in the woods offered a retreat to which he could retire when his eyes wearied of the view of nature tamed and trimmed, from his study on the bank of the Hudson.

In the spring of 1895 the muck swamp was a seemingly hopeless tangle of brush and bogs, without sign of human habitation. One year later its black bed was lined with long rows of luxuriant celery, while from a low point at one end of the swamp had arisen a rustic cabin fitting the scene so harmoniously that one had to look twice to see it.

This is 'Slab Sides,' a dwelling of Mr. Burroughs' own planning, and, in part, construction, its outer covering of rough sawn slabs, which still retain their bark, being the origin of its name. In a future number we hope to present a photograph of the exterior of Slab Sides, with an account of the birds its owner finds about it. Part of its interior is well shown by our photograph of Mr. Burroughs seated before the fireplace, in which, as head mason and stone-cutter, he takes a justifiable pride. Here, from April to November, Mr. Burroughs makes his home, and here his most sympathetic readers may imagine him amid surroundings which are in keeping with the character of his writings.

The Camera as an Aid in the Study of Birds

BY DR. THOS. S. ROBERTS

Director, Department of Birds, Natural History Survey of Minnesota.
With photographs from Nature, by the Author.



ANYONE having an earnest interest in both natural history and photography can find no more delightful and profitable way of spending leisure hours than by prying into the secrets of Dame Nature with an instrument capable of furnishing such complete and truthful information as the camera. Delightful and fascinating, because it not only gives worthy purpose and charming zest to all outing trips, but yields results that tell in no uncertain way of things and incidents that it would be well nigh impossible to preserve in any other manner. There is no department of nature-study in which the camera cannot be turned to excellent account, and while records of lasting and scientific value are being made, the devotee of amateur photography has at the same time full scope for the study of his art. What may, perhaps, be considered the greatest value, albeit an unrecognized one, of the present widespread camera craze, is the development of a love for the beautiful and artistic which may result, and along the line of study here suggested may surely be found abundant material to stimulate in the highest degree these qualities. Too much time is spent and too much effort expended by the average 'kodaker' in what has been aptly termed "reminiscent photography," the results being of but momentary interest and of no particular value to anybody.

In the present and subsequent articles, it is intended to illustrate by pictures actually taken in the field by the veriest tyro in the art of photography, what may be accomplished by any properly equipped amateur in the way of securing portraits of our native birds in their wild state and amid their natural surroundings. Supplemental to such portraits are the more easily taken photographs of the nests, eggs, young, and natural haunts of each species; the whole graphically depicting the most interesting epoch in the life-history of any bird. Words alone fail to tell the story so clearly, so beautifully, and so forcibly. And, best of all, this can be accomplished without carrying bloodshed and destruction into the ranks of our friends the birds; for we all love to call the birds our friends, yet some of us are not, I fear, always quite friendly in our dealings with them. To take their pictures and pictures of their homes is a peaceful and harmless sort of invasion of their domains, and the results in most cases are as satisfactory and far-

reaching as to bring home as trophies lifeless bodies and despoiled habitations, to be stowed away in cabinets where dust and insects and failing interest soon put an end to their usefulness. It is not intended, of course, to reflect in any way upon the establishment of orderly and well-directed collections, for such are absolutely necessary to the very existence of the science of ornithology. To such collections the great body of amateur bird students should turn



CHICKADEE AT NEST-HOLE, WITH FOOD FOR YOUNG

for the close examinations necessary to familiarize themselves with the principles of classification and the distinctions between closely related species. Indeed, it is impossible for anyone to be intelligently informed as to the many varieties of birds, and their wonderful seasonal changes of plumage, without having actually handled specimens.

The growth of avian photography has been of short duration,—only a few years in this country and not much longer in England, where it seems to have had its inception. But there are already one or two good books dealing with the subject; and a goodly number of ornithological works of recent date, and especially the pages of the journal literature of the day, bear excellent testimony to the

merit and beauty of this method of securing bird pictures. Attention, however, has thus far been directed chiefly to obtaining illustrations of nests and eggs and captive birds, to the neglect of the more difficult but more interesting occupation of securing photographs of live birds in their wild state. Herein lies the chief fascination of this branch of photography, for good photographs from life of any of our birds, even the most common, are still novelties.

The successful bird photographer must possess a good camera, including a first-class lens, with at least an elementary knowledge of how to get the best results from it; some acquaintance with field and forest and their feathered inhabitants, and a fund of patience, perseverance, and determination to conquer that is absolutely inexhaustible. No matter how well equipped in other respects, this latter requisite cannot be dispensed with. As to the technique and many details of the art of photography, the writer is still too much of a novice to speak very intelligently. Suffice it to say, that the general principles governing other branches of photography are to be consulted here. One great difficulty to be encountered is that there is little opportunity to arrange the lighting or background of the object to be photographed, and as the latter is apt to be either green foliage or the dull ground, with the camera very near the object, the beginner will be much perplexed to determine the proper stop and the right time of exposure. With the usual appliances a wide open stop will be found necessary with the rapid exposure required, and this will detract in a disappointing manner from the beauty of the negative as a whole. But every determined student will try in his or her own way to lessen these defects, and will find in failure only increased incentive to discover better methods and better appliances. Cameras and lenses especially devised for this kind of work are promised in the near future. A rapid telephoto lens is a great desideratum, and there is reason to believe that in the near future such an one will be available. Those to be had at present increase the time of exposure too much to be generally useful in bird work. The writer has used a 4x5 long-focus 'Premo' with Bausch and Lomb Rapid Rectilinear lens (Zeiss-Anastigmat, Series II-A, $4\frac{1}{4} \times 6\frac{1}{2}$), the focal length of the combination being about $6\frac{1}{4}$ inches. Many kinds of plates have been used, but any good rapid plate will do. For those who are willing to take the additional care necessary to handle them successfully, rapid isochromatic or orthochromatic plates are undoubtedly to be preferred, as they preserve quite clearly the color values.

A consideration of the actual field difficulties, rather than the more purely photographic problems to be encountered, is more within the scope of the present paper. To this end a rather detailed account is given of just how each of the following groups of photographs was secured, hoping that others better equipped, with a better knowledge of photography, and with more leisure, may be encouraged to go and do likewise and present us with the results.

One of the greatest of these field difficulties is that the camera is rarely focused upon the bird to be taken, but is either snapped at random or focused upon some spot to which the bird is expected to return. The latter, in the great majority of cases, is the nest; at other times a much-used perching-place or feeding-ground. Success depends, therefore, very largely upon the nature, disposition, and habits, especially nesting habits, of the particular bird being dealt with. Some birds are of a confiding, unsuspecting nature, and easily reconciled to quiet intrusion; while others are so timid and wary that hours of time have to be expended, and all sorts of devices resorted to, in order to get the coveted 'snap.' Of the risk of life and limb necessary to reach rocky cliff and lofty tree-dwelling species, the recital must come from such daring and fearless devotees of this art as the Kearton brothers of England, and others nearer home.

The nest being the lure usually employed to bring the bird within range of the camera, it will follow that the nesting season is the time of year when most of this work must be done. Thus, spring and early summer are the harvest time of the bird photographer, and as it happens that these, of all the seasons, are the most delightful in which to be afield, the bird-lover, with glass, camera, and note-book, can leave care behind and find contentment, rest, and peaceful profit in the glorious days of June, so happily styled the rarest of all that come.

Leaving general considerations, let us first study a series of photographs that well illustrates what charming and dainty little pictures can sometimes be secured with most trifling effort. Success in this instance was easily attained because the little 'sitters' were not very unwilling and because the conditions under which they lived were more than usually favorable. The subject of these photographs, the little Black-capped Chickadee, or Titmouse,—*Parus atricapillus*, the scientists call him,—is familiarly known to almost every one who has given even casual attention to birds. Its generally common occurrence throughout the United States, cheery, happy disposition, and lively notes as the little band, for they usually travel in companies, goes roaming through woodland and

copse, endears it to all. All through the long, dreary winter, with its short days and perpetual snow and ice, they are the same sprightly, contented little fellows, and refreshing it is to meet and visit with them at such times as they come 'chick-a-de-dee'-ing right into your very presence in their familiar, confiding way.



CHICKADEE LEAVING NEST

Springtime finds them with a mellow, long-drawn love whistle of two notes and thoughts of home and home likethings. Soon, down by the lake or brook-side, or in some moist woodland glade, where birch and willow trunks long since dead and soft with age stand sheltered among the growing trees, the little Black-cap and his chosen mate pick out a cozy retreat. This, perhaps, is some deserted Woodpecker den, decayed knothole, or more often it is a burrow of their own making, and here they assume the delights and cares of wedded life. A snug, warm nest of rabbit's hair or fern down is quickly built, and in this softest of beds the five or six rosy

white, finely speckled little eggs are laid. Before very many days, eight or ten at most, the old stump exhibits unmistakable signs of being animated within, and in a wonderfully short time the little nestlings are as large as their parents, and full, indeed, is this family domicile. Owing to the cleanly habits and care of the old birds, the dresses of the youngsters are cleaner and brighter than those of their hard-worked, food-carrying parents. It was just at this stage in their progress that the little family, whose portraits are here shown, was discovered one late June day, snugly ensconced within the crumbling trunk of a long since departed willow tree. With a bird-loving companion, Mr. Leslie O. Dart, the writer was drifting idly in a little boat through one of the many channels of the Mississippi river, which cut up into innumerable islands, the heavily wooded bottomland of eastern Houston county, Minnesota. Being in search of the nests of numerous Prothonotary Warblers, which were flashing hither and thither across the channel, we skirted the shore closely, tapping on all likely-looking stubs.

Now the tapping brought to view a Downy Woodpecker, then a beautiful Golden Swamp Warbler: sometimes unexpectedly a great gray mouse scrambled out and plunged boldly into the water beneath; but this time the blow was followed by a subdued hum from within, and an inquiring, anxious parent Chickadee appeared suddenly on the scene, joined in a moment by a second, and we had the family complete. It was near noon, the sun was shining brightly, the hole was on the water side of the stub in the light, and we had no Chickadee pictures: so we camped at once and prepared to 'do' the situation. A little investigation showed the nest to be too high for setting up the camera satisfactorily, as the tripod legs sank deep in the mud and water. But our kit included a saw for just such an emergency, and sawing off the soft stub at the proper height, it was lowered gently until the hole came just on a level with the camera, placed horizontally and at a distance of about three feet. Propped with a forked stick, it rested quite securely on the soft bottom. This was better than tipping the camera and employing the 'swing back,' as the sun was nearly overhead. After focusing carefully on the opening in the stub, attaching to the camera fifty feet of small rubber tubing with large bulb, in place of the usual short tube and small bulb, setting carefully the trigger and other accessories of our harmless gun, and covering the whole camera with a hood of rough green cloth, the lens alone visible, we retreated to a convenient vantage point among the small willows close by. But a few minutes elapsed before the old birds were on the spot peering at us and the big green object from all sides. In an incredibly short space of time, considering the great liberties that had been taken with their habitation and door yard, they became resigned, and one of the birds, which we assumed to be the female, flew straight to the stub, and, with a last suspicious glance at the great glistening eye so near at hand, disappeared into the hole with a large brown worm in her bill. But that momentary delay was the looked-for opportunity, and all-sufficient; for with a quick squeeze of the bulb, click went the shutter, and in the twenty-fifth of a second the bird was ours; shot without so much as knowing it, without indeed the ruffling of a feather or the drawing of a drop of blood, and preserved lifelike and true to nature for all time to come.

From this time on the birds came and went without hesitation, the only serious delays in our operations being due to the drifting clouds, which now and then obscured the sun and rendered the light too weak for the rapid exposures necessary. One of the birds, the one we took to be the female, was a little more courageous

than the other, and it is her picture that appears oftenest. The timid one,—the male,—even went so far on several occasions as to himself devour the worm he had brought rather than trust himself at close quarters with the unknown enemy, although his mate was at the time coming and going industriously and keeping the little folk well supplied with the great larvæ. Surely personal traits and individuality are quite as well marked in the bird world as higher



YOUNG CHICKADEES.

in the scale! After we had made several more exposures similar to the first, one of the best of which shows the bird, worm-laden as before, balanced on the edge of the hole and taking the usual last look at the camera, we turned our attention to catching her as she was coming out. This required quicker coöperation between eye and hand, as the exit was generally made with a dash; but the accompanying picture, with head just emerging, will show that we were fairly successful.

Having concluded from all indications, chief among which was the immense number of huge caterpillars carried in to the young,

that the latter must be fairly grown, we decided to expose the nest and complete our collection by securing the entire family. So carefully sawing away the front wall of the cavity with a keyhole saw carried for just such purposes, we gave the little fellows within their first view of the outside world. I fear they must have thought the manner of opening their second shell a rather rude one, and the outlook somewhat forbidding. They were pretty little youngsters, fully grown, with clean, jaunty coats, and a grown-up 'chickadee-dee,' just like the old folks. Though somewhat dazzled at first by the sudden flood of bright sunlight, they were, after a little coaxing, induced to sit out on the veranda that had been improvised for them; but, like youthful sitters generally, they were hard to pose, and after many exposures, we succeeded in getting no more than two of them at once. The prettiest one of all, showing two of the little fellows as they finally settled down contentedly in the warm sunshine, was obtained at the expense of much patient effort and a great deal of slushing back and forth in mud and water between boat and camera, and it was gratifying to find that one at least of the negatives did fair justice to the situation.

The old ones came and went after the mutilation of their home, just as before, and, indeed, apparently found the new arrangement much more convenient than the old. In one of the photographs here presented, domestic affairs that had before been entirely concealed from view are fully revealed, and had not the plate been light-struck by one of the many aggravating accidents likely to occur in the outdoor work of the beginner, the picture would have been the best of the series. The courageous parent is attending to her maternal duties under circumstances which must appear most appalling. The little fellow sitting so contentedly by has undoubtedly had his share of the huge juicy caterpillars, and patiently recognizes that it is not his turn.

(To be concluded)



CHICKADEE FEEDING YOUNG

From a Cabin Window

BY H. W. MENKE

With Photographs from Nature by the Author



DURING the winter of 1897-8 I prospected for Jurassic fossils in Carbon and Albany counties, Wyoming. When cold weather and snow rendered field work impracticable as well as very disagreeable, I made permanent camp for the winter at Aurora, Wyoming,—a mere station on the Union Pacific R. R., an old abandoned section-house serving as my winter quarters.

This part of Wyoming,—at all times dreary and lonely, —is strikingly so during winter months. Then snow fills the ravines and lends a level, prairie-like aspect to the landscape. I doubt if there is to be found anywhere a more desolate country



HORNED LARKS AND SNOWFLAKES

than this; at least such was my impression when the novelty of my surroundings had worn off.

Among the various expedients to which I resorted for amusement, was photographing such birds as I could lure around the cabin. That I was not more successful in securing good negatives is due to the difficulties with which I had to contend. Chief of these were the

fierce, wintry blasts sweeping over the plains and filling the air with snow and dust.

A single experiment taught me the inadvisability of leaving the camera exposed for any length of time to these conditions. I had been trying to get a large photograph of Horned Larks. The camera was placed on the ground and a handful of oats scattered before it,



HORNED LARKS AND SNOWFLAKES

while I waited within the cabin for nearly two hours for an opportunity to pull the thread attached to the camera shutter. But the birds persistently avoided the pebble marking the focal plane, and clouds continually obscured the sun when I wished to make an exposure. At last the right moment came, I pulled the thread, and hurried out to get the result. That plate was never developed. Snow had clogged the shutter, and I found it had remained wide open after being sprung.

By throwing oats on only one spot, and that close to the window, I soon gathered quite a flock of Horned Larks, who came regularly every morning to feed from the constantly replenished supply. Finally, after a week of gloomy, dark weather, a cloudless sky offered especially good chances for a photograph of my feathered friends. This time I placed the camera on the window-sill. Maneuvres attendant upon focusing and inserting a plate-holder, of course,

frightened the birds away. They were back again within a few minutes, but an unexpected source of annoyance interfered. A freight train stopped opposite the scene of my operations and belched great billows of smoke between the sun and the birds. Also the shadow of the cabin was gradually encroaching on the feeding ground. I made a trial exposure, however, and obtained a very good negative. But a shadow in the foreground and a wagon tongue in the rear, did not add to the pictorial effect of the group.

After much pulling and prying, I pushed the objectionable wagon out of the drifts, and put off further photographing until the next morning. The morning came as bright and sunny as I desired. My



YELLOW-HEADED BLACKBIRDS

feathered subjects were early in the open air studio, and required no conventional admonition to 'look pleasant.' In fact, they were almost too lively for the camera shutter. The negative obtained proved very good, and well repaid me for all trouble and annoyance.

A few Yellow-headed Blackbirds were attracted by the food supply I furnished, and I made several negatives of them. The Yellow-heads were more wary than the Horned Larks, and flew away at the slightest disturbance. Only a few at a time gathered beneath the window, while the others perched on fence-posts at a safe distance and kept watch.

But it remained for a Northern Shrike to add 'insult to injury,' by seizing a dead mouse I had placed on a post and alighting on the camera with its capture!

For Teachers and Students

Bird-Studies for Children

BY ISABEL EATON



IT IS a simple matter enough, with the little folk who happily live in the country, to excite an interest and develop a familiar friendship with their bird neighbors. The birds can easily be coaxed to the piazza or the window-shelf by the judicious offer of free lunch, and so a speaking acquaintance, perhaps even a life-long friendship, with them may be gained.

But with city children, especially those of the poorer classes, the case is very different. The question how to teach them to know and care for birds is by no means so easy.

Look at their case: they have seen no birds but English Sparrows and caged Canaries and Parrots; few of them know the Robin; they practically never go to the country, and many of them never even go to the parks. How shall they be taught about birds? Observing the rule of advancing from known to unknown, would suggest Dick the Canary, as the obvious point of departure from a tenement into the world of birds; then, perhaps, the Summer Yellow-bird in the park, commonly known as the 'Wild Canary,' and then Mr. Goldfinch and his little olive-brown spouse, who would make a natural transition to the brown Sparrow family, and so on. The difficulty here is that it is so nearly impossible to get city children up to the park to see the Yellow-bird.

So another method, involving no country walks and no live birds, has to be resorted to. We may use pictures,—drawn before the class and colored, if possible,—and, trusting to the children's powers of imagination and idealization, may connect with their experience at some other point. After studying about the carpenter, in kindergarten or primary school, for instance, it is easy to interest children in the Woodpecker by proposing to tell them about a "little carpenter bird;" after talking of the fisherman, a promise to tell them of a bird who is a fisherman is sure to stir their imaginations of the doings of the Kingfisher, and so with the weaver (Oriole), mason (Robin) and others.

When several birds have been learned, the best kind of review for little people is probably some game like the following, which has been

played with most tumultuous enthusiasm and eager interest in a certain New York school of poor children. The teacher says:

“Let’s play ‘I’m thinking of a bird.’ All shut your eyes tight and think. Now, I’m thinking of a bird nearly as large as a Pigeon: he is brownish, with black barring on the back, black spots all over the breast,” etc., etc., giving a description of the Yellow Hammer, or Flicker, but leaving the characteristic marks until the end of the description. Before the teacher has gone far, a dozen hands are waving wildly and several vociferous whispers are heard, proclaiming in furious pianissimo: “I know.” “I know what it is.” Then the child who gets it right is allowed to describe a bird for the class to guess, and if the description fails in any point the class may offer corrections.

This appeal to the play instinct excites great interest, which is the thing chiefly to be desired.

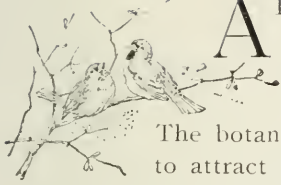
When a number of birds have been learned in this way, a trip to the Natural History Museum would be of very great value, especially noticing the wonderful reproductions of actual scenes from bird-life there displayed. In this way city children could see in a single day more real bird-life than they could otherwise get in a year, as their few country days are generally populous picnics, from which the birds flee aghast.

The children should take their kindergarten principles of observation and conversational description to the Museum with them, and, on returning to school, should draw and color some bird they have seen. To observe and describe and, perhaps, draw each new bird whose picture is shown in the classroom is also a good thing. The writer passed a mounted Flicker through a class of fifty children of kindergarten age, let them look and carefully handle, and then asked for “stories” about it. One child said: “I know—Oh—I know seven stories—no, eight—*nine* stories about Mr. Yellow Hammer,” and she really did know her nine “stories.”

When they have gone as far as this, most bird stories will interest them, especially if the birds are humanized for them by the teller of the tale.

To sum up, it may be said that the best way to begin is to teach a few birds well,—a dozen or so,—by connecting with the child’s experience, in some way, the information to be given, and then employing the play instinct by having bird games of various kinds, both kindergarten bird games and others: observation, description and drawing of birds may follow, and first and last, and all the time, all descriptions and stories given to children should be in terms of human nature.

Winter Bird Studies



ALTHOUGH we have fewer birds during the winter than at any other season, at no other time during the year do the comparative advantages of ornithology as a field study seem so evident. The botanist and entomologist now find little out of doors to attract them, and, if we except a stray squirrel or rabbit, birds are the only living things we may see from December to March. Winter, therefore, is a good time to begin the study of birds, not only because flowers and insects do not then claim our attention, but also because the small number of birds then present is a most encouraging circumstance to the opera-glass student, who, in identifying birds, is at the mercy of a 'key.'

Indeed, the difficulty now lies not in identification, but in discovery; unless one is thoroughly familiar with a given locality and its bird-life, one may walk for miles and not see a feather—a particularly unfortunate state of affairs if one has a bird-class in charge. This dilemma, however, may be avoided by catering to the dominant demand of bird-life at this season, the demand for food. Given a supply of the proper kind of food, and birds in the winter may nearly always be found near it. Bird seed and grain may be used, but a less expensive diet, and one which will doubtless be more appreciated, consists of sweepings from the hay-loft containing the seeds to which our birds are accustomed. This may be scattered by the bushel or in a sufficient quantity to insure a hearty meal for all visiting Juncos and Tree Sparrows, with perhaps less common winter seed-eaters.

The bark-hunting Woodpeckers, Nuthatches, and Chickadees will require different fare, and meat-bones, suet, bacon-rinds and the like have been found to be acceptable substitutes for their usual repast of insects' eggs and larvæ.

Winter, strange as it may seem, is an excellent season for bird-nesting. The trees and bushes now give up the secrets they guarded from us so successfully during the summer, and we examine them with as much interest as we pore over the 'Answers to Puzzles in Preceding Number' department of a favorite magazine.

Immediately after a snow storm is the best time in which to hunt for birds' nests in the winter. Then all tree and bush nests have a white cap, which renders them more conspicuous.

When walking with children, the spirit of competition may be aroused by saying "Who'll see the first nest." or "Who'll see the next nest first." as the case may be, and the number discovered under this impetus is often surprising.

For Young Observers

Boys and girls who study birds are invited to send short accounts of their observations to this department.

Our Doorstep Sparrow

BY FLORENCE A. MERRIAM.



DON'T think that I mean the House, or English Sparrow, for he is quite a different bird.

Our little doorstep friend is the very smallest of all the brown Sparrows you know, and wears a reddish brown cap, and a gray vest so plain it hasn't a single button or stripe on it. He is a dear, plump little bird, who sits in the sun and throws up his head and chippers away so happily that people call him the Chipping Sparrow.

He comes to the doorstep and looks up at you as if he knew you wanted to feed him, and if you scatter crumbs on the piazza he will pick them up and hop about on the floor as if it were his piazza as well as yours.

One small Chippy, whom his friends called Dick, used to light on the finger of the kind man who fed him, and use his hand for dining-room, and sometimes when he had had a very nice breakfast, he would hop up on a finger, perch, and sing a happy song!

Dick was so sure his friends were kind and good, that as soon as his little birds were out of the nest, he brought them to be fed too. They did not know what a nice dining-room a hand makes, so they wouldn't fly up to it, but when the gentleman held their bread and seeds close to the ground, they would come and help themselves.

CHIPPY'S NEST.

If you were a bird and were going to build a nest, where would you put it? At the end of a row of your brothers' nests, as the Eave Swallows do? Or would that be too much like living in a row of brick houses in the city? Chipping Sparrows don't like to live too close to their next door neighbors. They don't mind if a Robin is in the same tree, on another bough, but they want their own branch all to themselves.

And they want it to be a branch, too. Other birds may build their nests on the ground, or burrow in the ground, or dig holes in



TAMING A CHIPPY

Photographed by Mr. George Wood at the home of Lieutenant Wirt Robinson, in Virginia. Lieutenant Robinson writes that a pair of Chipping Sparrows placed their nest in the climbing rose bush at the end of the piazza. One of the pair, supposed to be the female, was easily tamed with the aid of bread crumbs, and for three successive years she returned to the piazza, always immediately resuming her habits of familiarity.

tree trunks, or even hang their nests down inside dark chimneys if they like, but Chippy doesn't think much of such places. He wants plenty of daylight and fresh air.

But even if you have made up your mind to build on a branch, think how many nice trees and bushes there are to choose from, and how hard it must be to decide on one. You'd have to think a long time and look in a great many places. You see you want the safest, best spot in all the world in which to hide away your pretty eggs, and the precious birdies that will hatch out of them. They must be tucked well out of sight, for weasels and cats, and many other giants like eggs and nestlings for breakfast.

If you could find a kind family fond of birds, don't you think it would be a good thing to build near them? Perhaps they would drive away the cats and help protect your brood. Then on hot summer days maybe some little girl would think to put out a pan of water for a drink and a cool bath. Some people, like Dick's friends, are so thoughtful they throw out crumbs to save a tired mother bird the trouble of having to hunt for every morsel she gets to give her brood. Just think what work it is to find worms enough for four children who want food from daylight to dark!

The vines of a piazza make a safe, good place for a nest if you are sure the people haven't a cat, and love birds. I once saw a Chippy's nest in the vines of a dear old lady's house, and when she would come out to see how the eggs were getting on she would talk so kindly to the old birds it was very pleasant to live there. In such a place your children are protected, they have a roof over their little heads so the rains won't beat down on them, and the vines shade them nicely from the hot sun.

When you are building your house everything you want to use will be close by. On the lawn you will find the soft grasses you want for the outside, and in the barnyard you can get the long horse hairs that all Chipping Sparrows think they must have for a dry, cool nest-lining. Hair-birds, you know Chippies are called, they use so much hair. The question is how can they ever find it unless they do live near a barn? You go to look for it, someday, out on a country road or in a pasture. It takes sharp eyes and a great deal of patience, I guess you'll find them. But if you live on the piazza of a house, with a barn in the back yard, you can find so many nice long hairs that you can sometimes make your whole nest of them. I have seen a Chippy's nest that hadn't another thing in it—that was just a coil of black horse hair.

After you have built your nest and are looking for food for your young it is most convenient to be near a house. The worms

you want for your nestlings are in the garden, and the seeds you like for a lunch for yourself are on the weeds mixed up with the lawn grass. You needn't mind taking them, either, for the people you live with will be only too glad to get rid of them, because their flowers are killed by the worms, and their lawns look badly when weeds grow in the grass, so you will only be helping the kind friends who have already helped you. Don't you think that will be nice?

CHIPPY'S FAMILY.

Did you ever look into a Chippy's nest? The eggs are a pretty blue and have black dots on the larger end.

When the little birds first come out of the shell their eyes are shut tight, like those of little kittens when they are first born.

If you are very gentle you can stroke the backs of the little ones as they sit waiting for the old birds to feed them.

I remember one plum tree nest on a branch so low that a little girl could look into it. One day when the mother bird was brooding the eggs the little girl crept close up to the tree, so close she could look into Mother Chippy's eyes, and the trustful bird never stirred, but just sat and looked back at her. "Isn't she tame?" the child cried, she was so happy over it.

There was another Chippy's nest in an evergreen by the house, and when the old birds were hunting for worms we used to feed the nestlings bread crumbs. They didn't mind the bread not being worms so long as it was something to eat. It would have made you laugh to see how wide they opened their bills! It seemed as if the crumbs could drop clear down to their boots! Wouldn't you like to feed a little family like that sometime?

A Prize Offered

WE want the boys and girls who read BIRD-LORE to feel that they have a share in making the journal interesting. Young eyes are keen and eager when their owner's attention is aroused: so we ask the attention of every reader of BIRD-LORE of fourteen years or under to the following offer: To the one sending us the best account of a February walk we will give a year's subscription to this journal. The account should contain 250 to 300 words, and should describe the experiences of a walk in the country or some large park, with particular reference to the birds observed.

Notes from Field and Study

An Accomplished House Sparrow

In June, six or seven years ago, my daughters found in the courtyard of our home, a young House or English Sparrow who had evidently fallen from the nest, and had broken its leg in the fall. They took it in and cared for it, binding up the injured limb and feeding it as experience with other birds of the same family had taught them to do. Happily, the bird recovered, and in a short time became quite a pet of the household.

At that time we had two Canary Birds, both beautiful singers, and in almost constant song. The Sparrow was in the same room with them, and very soon (making use of its imitative power, which we have observed is a strong characteristic of the Sparrow) acquired the full and complete song of the Canaries. We followed with much pleasure the unfolding of his musical ability, which was gradual, and found that he had surpassed his teachers, producing melodies much richer and stronger, as all who had the pleasure of listening to him freely admitted.

The bird retained his song to the last, although as age came upon him, as with all other pet birds, his singing was less and less frequent till he passed away, some few months ago. Besides imitating the song of the Canary, he acquired the song of a bird in our collection known as the 'Strawberry Finch,' which he gave perfectly. His plumage was greatly improved by his confinement and the very great care given him, so much so, that one almost doubted his being an English Sparrow till convinced upon closer examination.

We have had a large experience with these birds: they become very affectionate with petting, and show a wonderful degree of intelligence.

I would further say that our Sparrow had all the notes common to the English

Sparrow, beside his acquired accomplishments, and there was sadness in our home when his little life went out.—JOHN L. ROYAL, *Brooklyn, N. Y.*

A Nut-hatching Nuthatch

On October 14, 1898, while on a short visit to my old home, at New Baltimore, New York, I sat down near a clump of trees and shrubs to enjoy the bird-life so abundant there.



ACORN WEDGED IN BARK BY WHITE-BREADED NUTHATCH

Photographed from *Nature*, by E. B. Southwick

Here I saw the Chickadee carefully examining the fruit-heads of the smooth sumach, and twice take from them a mass of spider-web; then, flying to a limb, dissect it and obtain from it the mass of young or eggs. It was with difficulty that the food was disentangled from the silk, and I found on examination that much of it had been so crushed, that it was impossible to determine whether the web contained eggs or young.

While thus engaged, I saw a White-breasted Nuthatch, with something in its

beak, alight on the trunk of a wild cherry tree. While running about over the bark, the bird dropped what proved to be an acorn, but immediately flew down and picked it from the long grass, and returned to the tree. A second time it dropped it, and then, after carrying it again to the tree, thrust it into a crevice in the bark with considerable force, and began to peck at it vigorously. This it did for a few seconds, when I jumped up quickly and, with wild gesticulations, frightened it away. It proved to be the acorn of the pin Oak (*Quercus palustris*), and as no fruiting tree of this species was nearer than the Island, in the river opposite, I concluded that the bird had carried it across the water from that point.

After photographing the acorn on the tree, I cut the section of bark off, glued the acorn in its cavity, and the photograph shows the result.—E. B. SOUTHWICK, *New York City*.

A Cover Design

This interesting sketch was contributed by a prominent ornithologist as an appropriate cover design for this magazine at a time when it was proposed to call it "The Bird World." The appearance of a book bearing this title renders it necessary for



us to abandon its use, but we do not, for the same reason, feel justified in depriving the world of this remarkably artistic effort, and therefore present it for the edification of our readers, and we trust, to the delight of its author!

Collecting a Brown Thrasher's Song

Rustler, my pet Brown Thrasher, was pouring out his loud, long, spring song. A phonograph, or rather a graphophone, had been left on a table by the cage. Everything seemed to favor the collection of a bird song. I placed the instrument so that the open funnel of the horn came within less than a foot of the Thrasher's swelling throat, and touching a lever, set the wax cylinder revolving below a sapphire-tipped style, which cut the bird notes into the wax. Just as the medley changed from that of a Catbird to that of a Wood Thrush, a Robin flew past the window. Rustler stopped short, but the style continued to cut and ruin the wax cylinder. When Rustler started in again he hopped to the opposite side of the cage, rudely turning his back upon the graphophone.

More than a little vexed at the perversity of dumb animals, I quickly covered over the end of the cage farthest from the graphophone; then Rustler sulked beneath the cloth in silence. Next I removed the perch from that side and then Rustler absolutely refused to sing any more. Some hours later, however, I made another attempt, but each time the graphophone was started the whirl of the revolving cylinder cut short my Thrasher's rich, rippling notes, so that the only thing to do was to remove the recording style and accustom him to the noise of the cylinder, and when this had been accomplished, I replaced the recording style. I found that by shutting off the graphophone the instant Rustler's notes became weak or stopped, I could catch a continuous series of notes. I succeeded the following morning in getting a pretty fair song. It was not so loud as it might have been, but in pitch and timbre it was perfect.

In September dear old Rustler died. For nine long years he had enlivened my northern New Jersey home with his cheery music. In November, at a meeting of the American Ornithologists' Union, the notes of Rustler's love song fell sweetly upon sympathetic ears.—SYLVESTER D. JUDD, PH. D., *Washington, D. C.*

Book News and Reviews

WITH NATURE AND A CAMERA. By RICHARD KEARTON, F. Z. S. Illustrated by 180 Pictures from Photographs by CHERRY KEARTON: Cassell & Co., London, Paris and Melbourne [New York, East 18th St.], 1898. 8vo. Pages xvi + 368. Price, \$5.

Authors may or may not be indebted to reviewers of their works, but it is not often that reviewers are under obligations to the authors of the works they review. In the present instance, however, we feel that we must express our gratitude to the Messrs. Kearton for furnishing us with such an admirable demonstration of the kind of ornithology for which this journal stands. If, following the same lines, we can bring BIRD-LORE to the high standard reached in 'With Nature and a Camera,' we shall have nearly approached our ideal.

Briefly, this book is a record of observation and photography by two ornithologists in Great Britain. Doubtless, no birds in the world have been more written about than the birds of this region, and still this book is filled with fresh and original matter, which is always interesting, and often of real scientific value.

Asked to explain how it was that in such a well-worked field the author of this volume had succeeded in securing so much new material, we should reply that we believed it was because he was an observer rather than a collector. Apparently realizing that to collect specimens of British birds would add but little to the store of our knowledge concerning them, he has devoted his time to a study of their habits, and in presenting the results of his labors, he has been most ably seconded by his brother, whose photographs of birds in nature have not, so far as we know, been excelled.

Perhaps the most forcible lesson taught by this book is the pleasure to be derived from photographing wild birds in nature, and the surprisingly good results which may be achieved by patient, intelligent effort. We do not recall a more ade-

quately illustrated nature book, and its pictures not only claim our admiration because of their beauty, but also because they carry with them an assurance of fidelity to nature which no artist's pencil can inspire.

BIRD GODS. By CHARLES DE KAY. With decorations by GEORGE WHARTON EDWARDS. A. S. Barnes & Co., New York. 12mo., pages xix+249. Price, \$2.

So singular a combination of ornithologist and mythologist is the author of 'Bird Gods' that students of birds, as well as of myths, will find his pages of interest. "Why," he asks himself, "should certain birds have been allotted to certain gods and goddesses in the Greek and Roman mythology? Why should the Eagle go with Zeus, the Peacock with Hera, the Dove with Venus, the Swan with Apollo, the Woodpecker with Ares, the Owl with Pallas Athené?" And his search for a reply to these questions has led him into many little-frequented by-paths of early European literature, in which he has found much curious information concerning the influence of birds on primitive religions. Impressed by the "share birds have had in the making of myth, religion, poetry and legend" he wonders at their wholesale destruction to-day, and ventures the hope that "recollection of what our ancestors thought of birds and beasts, of how at one time they prized and idealized them, may induce in us, their descendants, some shame at the extermination to which we are consigning these lovable but helpless creatures, for temporary gains or sheer brutal love of slaughter."

BIRDS OF WASHINGTON and VICINITY. By MRS. L. W. MAYNARD, with Introduction by FLORENCE A. MERRIAM. Washington, D. C., 1898. 12 mo, pages 204. Cuts in the text, 18. Price, 85 cents.

In a prefatory note the author states that this book "has been prepared at the suggestion of the Audubon Society

of the District of Columbia, in the belief that a local work giving untechnical descriptions of all birds likely to be seen in this vicinity, with something of the haunts and habits of those that nest here, will be useful to many who desire an acquaintance with our own birds, but do not know just how to go about making it."

The book seems admirably adapted to achieve this end. The opening pages by Miss Merriam are a capital introduction to the study of birds in the District of Columbia. They are followed by 'A Field Key to Our Common Land Birds,' and attractively written biographical sketches of the breeding species. The migrants and winter residents are treated more briefly, and an annotated 'List of All Birds Found in the District of Columbia,' by Dr. C. W. Richmond, is given. There are also nominal lists of winter birds, birds that nest within the city limits, etc., and an 'Observation Outline,' abridged from Miss Merriam's 'Birds of Village and Field.'

The book is, in fact, a complete manual of ornithology for the District of Columbia, and will undoubtedly prove an efficient guide to the study of the birds of that region.

BIRD-LIFE: A GUIDE TO THE STUDY OF OUR COMMON BIRDS. TEACHERS' EDITION. By FRANK M. CHAPMAN. With 75 full-page plates and numerous text-drawings by ERNEST SETON THOMPSON. D. Appleton & Co. New York. 1899. 12mo, pages xiv + 269 + Appendix, pages 87.

This is the original edition of 'Bird-Life,' with an Appendix designed to adapt the work for use in schools. The new matter consists of questions on the introductory chapters of 'Bird-Life,' as, for instance, 'The Bird, its Place in Nature and Relation to Man,' 'Form and Habit,' 'Color,' 'Migration,' etc.; and, under the head of 'Seasonal Lessons,' a review of the bird-life of a year based on observations made in the vicinity of New York City. This includes a statement of the chief characteristics of each month, followed by a list of the

birds to be found during the month, and, for the spring and early summer months, a list of birds to be found nesting.

For the use of teachers and students residing in other parts of the eastern United States there are annotated lists of birds from Washington, D. C., by Dr. C. W. Richmond; Philadelphia, Pa., by Witmer Stone; Portland, Conn., by J. H. Sage; Cambridge, Mass., by William Brewster; St. Louis, Mo., by Otto Widmann; Oberlin, Ohio, by Lynds Jones, and Milwaukee, Wis., by H. Nehrling.

The Appletons have also issued this book in the form of a 'Teachers' Manual,' which contains the same text as the 'Teachers' Edition,' but lacks the seventy-five uncolored plates.

This 'Teachers' Manual' is intended to accompany three 'Teachers' Portfolios of Plates,' containing in all one hundred plates, of which ninety-one, including the seventy-five plates published in 'Bird-Life,' are colored, while nine are half-tone reproductions of birds' nests photographed in nature. The one hundred plates are about equally divided in portfolios under the titles of 'Permanent Residents and Winter Visitants,' 'March and April Migrants,' and 'May Migrants and Types of Nests and Eggs.'

Audubon Bird Chart

A most practical step in Audubon educational work is the publication, by the Massachusetts Audubon Society, of a chart giving life-size, colored illustrations of twenty-six of our common birds. On the whole, both in drawing and coloring, these birds are excellent, and while a severe critic might take exception to some minor inaccuracies, the chart may be commended as the best thing of the kind which has come to our attention. It is accompanied by a pamphlet containing well written biographies, by Mr. Ralph Hoffmann, of the species figured. The chart is published by the Prang Educational Company, of Boston, from whom, with Mr. Hoffmann's booklet, it may be purchased for one dollar.

Bird - Lore

A Bi-monthly Magazine

Devoted to the Study and Protection of Birds

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

Published by THE MACMILLAN COMPANY

Vol. 1 FEBRUARY, 1899 No. 1

SUBSCRIPTION RATES.

Price in the United States, Canada, and Mexico, twenty cents a number, one dollar a year, postage paid.

Subscriptions may be sent to the Publishers, at Harrisburg, Pa., 66 Fifth avenue, New York City, or to the Editor, at Englewood, New Jersey.

Price in all countries in the International Postal Union, twenty-five cents a number, one dollar and a quarter a year, postage paid. Foreign agents, MACMILLAN AND COMPANY, LTD., London.

Manuscripts for publication, books, etc., for review, should be sent to the Editor at Englewood, New Jersey.

Advertisements should be sent to the Publishers at 66 Fifth avenue, New York City.

COPYRIGHTED, 1899, BY FRANK M. CHAPMAN.

DURING THE past six years New York and Boston publishers have sold over 70,000 text-books on birds, and the ranks of bird students are constantly growing. With this phenomenal and steadily increasing interest in bird-studies, there has arisen a widespread demand for a popular journal of ornithology which should be addressed to observers rather than to collectors of birds, or, in short, to those who study "birds through an opera-glass."

The need of such a journal has also been felt by the Audubon societies, and in concluding his report for the year 1898, Mr. Witmer Stone, chairman of the American Ornithologists' Union's Committee on Bird Protection, remarks on the necessity of a "magazine devoted to popular ornithology which could serve as an organ for the various societies and keep the members in touch with their work. All societies which have reached a membership of several thousand realize that it is impossible to communicate with their members more than once or twice a year, owing to the cost of postage, and the success of the societies depends largely upon keeping in communication with their members."

It is to supply this want of bird students and bird protectors that BIRD-LORE has been established. On its behalf we promise to spare no effort to make it all that the most ardent bird student could desire, and, in the event of our success, we would appeal to all bird-lovers for such support as we may be deemed worthy to receive.

WE HAVE issued a 'Prospectus,' setting forth in part the aims of BIRD-LORE, and as a matter of permanent record, we enter its substance here. It stated that BIRD-LORE would attempt to fill a place in the journalistic world similar to that occupied by the works of Burroughs, Torrey, Dr. van Dyke, Mrs. Miller, and others in the domain of books. This is a high standard, but our belief that it will be reached will doubtless be shared when we announce that, with one or two exceptions, every prominent American writer on birds in nature has promised to contribute to BIRD-LORE during the coming year. The list of contributors includes the authors just mentioned, Mabel Osgood Wright, Annie Trumbull Slosson, Florence A. Merriam, J. A. Allen, William Brewster, Henry Nehrling, Ernest Seton Thompson, Otto Widmann, and numerous other students of bird-life.

The Audubon Department, under Mrs. Wright's care, will be a particularly attractive feature of the magazine, one which, we trust, is destined to exert a wide influence in advancing the cause of bird-protection.

The illustrations will consist of half-tone reproductions of birds and their nests from nature, and on the basis of material already in hand, we can assure our readers that, whether judged separately or as a whole, this volume of BIRD-LORE will contain the best photographs of wild birds which have as yet been published in this country.

At present BIRD-LORE will contain from thirty-two to forty pages, but should our efforts to produce a magazine on the lines indicated be appreciated, we trust that the near future will witness a material increase in the size of each number.

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 (President of the Audubon Society of the State of Connecticut), Fairfield, Conn., to whom all communications relating to the work of the Audubon and other Bird Protective Societies should be addressed.

DIRECTORY OF STATE AUDUBON SOCIETIES

With names and addresses of their Secretaries.

New Hampshire.....	MRS. F. W. BATCHELDER, Manchester.
Massachusetts.....	MISS HARRIET E. RICHARDS, care Boston Society of Natural History, Boston.
Rhode Island.....	MRS. H. T. GRANT, JR., 187 Bowen street, Providence.
Connecticut.....	MRS. HENRY S. GLOVER, Fairfield.
New York.....	MISS EMMA H. LOCKWOOD, 243 West Seventy-fifth street, New York City.
New Jersey.....	MISS MARY A. MELLICK, Plainfield.
Pennsylvania.....	MRS. EDWARD ROBINS, 114 South Twenty-first street, Philadelphia.
District of Columbia.....	MRS. JOHN DEWHURST PATTEN, 3033 P street, Washington.
Wheeling, W. Va. (branch of Penn Society),	ELIZABETH I. CUMMINS, 1314 Chapline street, Wheeling.
Ohio.....	MISS CLARA RUSSELL, 903 Paradrone street, Cincinnati.
Indiana.....	AMOS W. BUTLER, State House, Indianapolis.
Illinois.....	MISS MARY DRUMMOND, Wheaton.
Iowa.....	MISS NELLIE S. BOARD, Keokuk.
Wisconsin.....	MRS. GEORGE W. PECKHAM, 646 Marshall street, Milwaukee.
Minnesota.....	MRS. J. P. ELMER, 314 West Third street, St. Paul.

This department will be devoted especially to the interests of active Audubon workers, and we earnestly solicit their assistance, as our success in making it a worthy representative of the cause for which it stands largely depends upon the heartiness of their coöperation. Others also, who are lovers and students of nature in many forms, but who have never, for divers reasons, engaged in any bird protective work, may, through reading of the systematic and effective methods of the societies, become convinced of the necessity of personal action.

We intend at once to establish the more practical side of the department by printing in an early issue a bibliography of Audubon Society publications, in order that anyone interested may know exactly what literature has appeared and is available. For this reason we ask the secretaries of all the societies to send us a complete set of their publications, stating, if possible, the number of each which has been circulated, and, when for sale, giving the price at which they may be obtained.

We also request the secretaries to send us all possible news of their plans and

work, not merely statistics, but notes of anything of interest, for even the record of discouragements, as well as of successes, may often prove full of suggestion to workers in the same field, and aid toward developments that will broaden and strengthen the entire movement. A movement in complete harmony with the great desire of thinking people for a broader life in nature, which is one of the most healthful and hopeful features of the close of this century.

M. O. W.

Reports of Societies*

THE MASSACHUSETTS SOCIETY

THE MASSACHUSETTS AUDUBON SOCIETY has reissued the Audubon Calendar of last year and it is having a good sale. The drawings were made especially for

*The editor acknowledges the receipt from Mr. Witmer Stone, chairman of the Committee on Bird Protection of the American Ornithologists' Union, of a number of the following reports, which, before the establishment of an official organ for the Audubon Societies, had been sent to Mr. Stone for inclusion in his annual report to the A. O. U., from which, through lack of space, they were necessarily omitted.

the calendar by a member of the society : the originals are painted in water colors on Japanese rice paper, and are very artistic bird portraits. The same artist is now at work on drawings of new birds for a calendar for 1900, which the directors hope will be reproduced by a more accurate and satisfactory process.

The Bird Chart of colored drawings of twenty-six common birds, which the Directors undertook last spring, is now ready. The drawings have all been especially made for the chart by E. Knobel and are reproduced by the Forbes Lithograph Manufacturing Co., on twelve stones. Some of our best ornithologists have seen the color proof and pronounce it good. The society has published a descriptive pamphlet to accompany the chart which has been prepared by Ralph Hoffman. His sketches of the birds are delightfully written, and the book is valuable in itself.*

The Directors have recently sent out a new circular mainly in Boston and vicinity, which briefly describes the work undertaken and asks for further coöperation from interested persons, and states that "in addition to our first object, the support of other measures of importance for the further protection of our native birds has been assumed by the Society. Among such measures may be mentioned :

1. Circulation of literature.
2. Improved legislation in regard to the killing of birds, and the better enforcement of present laws.
3. Protection during the season for certain breeding places of Gulls, Herons and other birds, which, without such protection will soon be exterminated.
4. Educational measures. This includes the publication of colored wall charts of birds, Audubon Calendars and other helps to bird study.

The response to this circular has been gratifying.

The society now numbers over twenty-four hundred persons, twenty-six of these are Life Associates, having paid twenty-five dollars at one time ; four hundred and

seventy-five are Associates, paying one dollar annually ; the remaining are Life Members, having paid twenty-five cents.

While the rage for feather decoration is unabated, we feel that there is steadily growing a sentiment among our best people in condemnation of the custom. There is a noticeable decrease in the use of aigrettes and of our native birds, excepting the Terns and the plumage of the Owl ; and a marked increase in the employment of the wings and feathers of the barnyard fowl. While the latter continue to feed the fashion they are harmless in themselves.

HARRIET E. RICHARDS, *Sec'y.*

* THE RHODE ISLAND SOCIETY

THE AUDUBON SOCIETY of Rhode Island was organized in October, 1897, and has now about 350 members.

The purposes of the society, according to its by-laws, are : the promotion of an interest in bird-life, the encouragement of the study of ornithology, and the protection of wild birds and their eggs. Some work has been done in the schools, abstracts of the state laws relating to birds have been circulated throughout the state, lectures have been given, and a traveling library has been purchased for the use of the branch societies.

Nearly five thousand circulars of various kinds have been distributed, and it is evident that the principles of the society are becoming well known and are exerting an influence, even in that difficult branch of Audubon work, the millinery crusade. ANNIE M. GRANT, *Sec'y.*

THE CONNECTICUT SOCIETY

A score of ladies met in Fairfield on January 28, 1898, and formed "The Audubon Society of the State of Connecticut." Mrs. James Osborne Wright was chosen president and an executive committee provisionally elected, representing so far as possible at the beginning, the State of Connecticut.

An effort was made to find every school district in the state, and a Bird-Day pro-

*See note on this chart and pamphlet in *Book News and Reviews.*

gramme was sent to 1,350 of these schools. Care was naturally used to see that the rural schools, at least, should be reached. Through the kindness of Congressman Hill of this district, one of our vice-presidents, 740 copies of Bulletin No. 54, 'Some Common Birds in their Relation to Agriculture,' issued by the United States Department of Agriculture, were received by the secretary, and 600 of these have been mailed to individuals.

The Society has had two lectures prepared, one by Willard G. Van Name, entitled 'Facts About Birds That Concern the Farmer,' illustrated by sixty colored lantern slides, and one by Mrs. Mabel Os-good Wright, on 'The Birds About Home,' illustrated by seventy colored slides. A parlor stereopticon has been purchased for use in projecting the slides.

The lectures and slides are intended primarily for the use of the local secretaries of the society, and after these for such members of the society as desire to give educational entertainments in the interest of bird protection.

The only expense connected with the use of the lectures and slides will be the expressage from Fairfield to place and return.

Under no circumstances will the outfit be allowed to go outside of the State of Connecticut.

The oil lantern accompanying the slides is suitable for a large parlor or school room, and can be worked by anyone understanding the focussing of a photographic camera, but it is advised that when the audience is to be composed of more than fifty people the exhibitor should secure a regular stereopticon.

Applications should be made at least two weeks before the outfit is desired.

No admission fee is to be charged at any entertainment at which the outfit is used, the intention of the Audubon Society of the State of Connecticut being to furnish free information about our birds, and so win many, who may never have given the matter a thought, to a sense of the necessity and wisdom of their protection.

The secretary is glad to report on

January 1, 1899, that the society has had practical proof of the success of its experiment in sending out these free illustrated lectures. Much interest has been awakened by them, and the State Board of Agriculture has listed both lectures for the Farmers' Institutes, held during the winter months. Much enterprise is being shown by local secretaries. An illustrated lecture by Mrs. Kate Tryon, having been given in Bridgeport, November 19, under the auspices of Miss Grace Moody (local secretary), Mrs. Howard N. Knapp, and Mrs. C. K. Averill. While Mr. Frank M. Chapman lectured before a large audience at the Stamford High School, on December 2, under the auspices of Mrs. Walter M. Smith, the local secretary of that city.

HARRIET D. C. GLOVER,
Cor. Sec'y and Treas.

NEW YORK SOCIETY

Since November, 1897, the society has distributed 13,465 leaflets, making a total distribution of over 40,000 since its organization on February 23, 1897.

In spite of this large circulation of literature, the society has only 529 members, including 9 patrons, 7 sustaining members, 356 members, 157 junior members.

Financially, the society is now in a sound condition.

During the year two public meetings have been held in the large lecture hall of the American Museum of Natural History, at both of which the hall was well filled. Addresses were made by Dr. Henry van Dyke, Dr. Heber Newton, and others.

A 'Bird Talk' was also given by Mr. W. T. Hornaday, at the house of one of the honorary vice-presidents, which was well attended.

In educational work we have secured the publication of a paper on 'The Relation of Birds to Trees,' by Florence A. Merriam, in the annual Arbor Day Manual of New York State, and Mr. Chapman, chairman of our Executive Committee,

reports that in connection with Professor Bickmore, of the American Museum's Department of Public Instruction, and a committee representing the science teachers of the fourteen normal colleges of the State, he has prepared a course in bird study for the normal colleges for the present year.

Further interest in birds was shown by the science teachers of the State in their invitation to Mr. Chapman to address them on the subject of 'The Educational Value of Bird Study,' during their convention, held in New York City, December 29-30, 1898.

That the good work accomplished cannot be gauged by the number of members is proved by the constant reports received from local secretaries and others, telling of classes formed for bird study, of clubs that have taken up the subject, of bird exercises in schools, etc. If all these silent sympathizers would only realize how much the cause might be strengthened by open, concerted action, shown by a large membership roll of the Audubon Society, its influence would be greatly increased.

EMMA H. LOCKWOOD, *Sec'y.*

NEW JERSEY SOCIETY

We have at present 124 members and have distributed over 1,000 general circulars in regard to the work, and 1,000 aigrette circulars written by Mr. Chapman. We expect to have new literature issued during the coming year, and are now having the State bird-laws printed for distribution.

MARY A. MELLICK, *Sec'y.*

DISTRICT OF COLUMBIA

Mrs. John Dewhurst Patten, secretary of the Audubon Society of the District of Columbia, reports much valuable work. A course of six lectures was given by Mrs. Olive Thorne Miller, and others by Mr. Chapman and Dr. Palmer.

A successful and fashionably attended

exhibit of millinery was held in April. Nine of the leading milliners contributed hats and bonnets, which, of course, were entirely free from wild bird feathers. The society has designed an Audubon pin after a drawing of the Robin, by Mr. Robert Ridgway. This has already been adopted by the Pennsylvania and Massachusetts societies. At the suggestion of the secretary of the Pennsylvania society, efforts have been directed towards the establishment of societies in the south.

In response to a great demand for a cheap book of information about local birds, this society has been instrumental in issuing 'Birds of Washington and Vicinity,'* by Mrs. L. W. Maynard—200 pages 12mo, illustrated, which may be had for the small sum of 85 cents. The price placing the volume within the reach of teachers and pupils in the public schools.

OHIO SOCIETY

Miss Clara Russell, corresponding secretary of the Ohio society, informs us that at a meeting held in Cincinnati on December 14 an Ohio Audubon society was organized with the following officers: President, William Hubbell Fisher; vice-president, William H. Venable; corresponding secretary, Miss Clara Russell; secretary, Mrs. T. B. Hastings; treasurer, Mrs. W. T. Armor.

On December 30 Miss Russell writes: "We have over fifty members, and feel much encouraged that we have aroused a sentiment in this locality to know more about our feathered friends, and to protect birds from being wantonly destroyed for pleasure, fashion, or the table."

REPORTS from the New Hampshire, Pennsylvania, Indiana, Illinois, Iowa, Wisconsin, and Minnesota Societies, will appear in the April number.

*See a review of this book in *Book News and Reviews*.



LEAST BITTERN ON NEST

Photographed from Nature by E. G. Tabor. (See page 39)

Bird = Lore

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

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. 1

APRIL, 1899

No. 2

The Camera as an Aid in the Study of Birds

BY DR. THOS. S. ROBERTS

Director Department of Birds, Natural History Survey of Minnesota
With photographs from Nature by the Author

(Concluded from page 13)



TURNING reluctantly from the attractive little Chickadee family, described in the preceding number of this magazine, we will next seek the acquaintance of a bird of entirely different feather, and, what is of more moment to the bird photographer, of entirely different disposition.

The Killdeer Plover, perhaps from his close kinship to the fraternity of game birds, has come to regard man and all human devices with deep suspicion, and to get on terms of close fellowship with him is no easy matter. While not himself an usual object of the sportsman's effort, owing to his lean body and indifferent savor, he is the immediate relative of those much sought-after birds, the Golden and the Black-bellied Plover. Unlike these more aristocratic members of the Plover group, the Killdeer does not retire to semi-arctic fastnesses to rear its brood, but nests wherever found throughout the eastern United States. Its ever-restless nature and loud alarm, "killdee, killdee," as it moves from place to place, or circles round and round, always at a safe distance, together with its common occurrence throughout populated as well as wild regions, makes this plebeian well-known to every country lad and the bane of every would-be stealthy Nimrod. So noisily persistent is its outcry that it has been dubbed by ornithologists *vocifera*—*Ægialitis vocifera*—and a most appropriate appellation it is.

Like many loquacious people, Mr. and Mrs. Killdeer have a rather lazy vein in their makeup, and spend but little time or effort nest building. A little depression lined with a few bits of stick or

straw, a few pebbles or other handy materials satisfies their ambition. In the bare, exposed situation usually chosen, such a nest, with its four spotted eggs, is much less conspicuous than would be a well made one. The first of our pictures showed one of these nests located in a cornfield, which is a not very uncommon site, although bare pasture knolls and gravelly banks are more usually selected. The photograph of the nest and eggs was, of course, easily secured, and is chiefly of interest because it shows so well how an open nest with its eggs may be protected by blending perfectly with the general color of the immediate surroundings—protective coloration, as it is called. To secure the portrait of the



KILLDEER ON NEST

wary old Killdeer, who left the nest the instant anyone but entered the large field, seemed a hopeless task. But the novice is ever ambitious, and the attempt was made in the following fashion, with what success the accompanying pictures will show. Placing the camera on the sharply tilted tripod, so that the distance from lens to nest was about four feet, the dreadful looking object was left in position for some time on the evening preceding the day on which the photographs were taken. The next day proved light and clear, and with the sun well up in the heavens we began operations, my companion and assistant on this occasion being Rev. H. W. Gleason, a bird enthusiast undaunted by any obstacle and fertile

in devices. Arranging the camera as already described, omitting the green hood in this instance, as it would have been worse than useless, we retired entirely from the field, which fortunately lay on a gently sloping hillside. From our distant retreat we watched, with field-glass in hand, the maneuvers of the mother bird. The experience of the preceding evening had evidently helped to prepare the way, for after only brief delay the anxious bird began running in a great spiral steadily converging to the central point. Every clod of earth or little mound in the path was mounted and, with much craning of neck and turning of head, the dreadful engine glistening in the sunshine was closely scrutinized from all sides, but as it was motionless, it probably was regarded as some new-fangled contrivance for cultivating corn, of finer build than the hoes, rakes, and other implements left by the men in the field. Once satisfied, she made a last quick run directly between the legs of the tripod, and stood erect over her treasures. A long trolling-line, procured at a neighboring farmhouse, had been attached to the lever arm releasing the shutter, as our seventy-five feet of tubing was not half long enough. Creeping to the end of the line, a quick pull made the exposure,— $\frac{1}{25}$ of a second, with wide open stop and rapid plate. Pulling up the slack of the line seemed to startle the bird more than the click of the shutter, and after repeating this procedure several times we were altogether uncertain as to whether the bird had been caught at all; and as it was impossible, there in the field, to follow the advice of an interested farmer spectator, who insisted that we "ought to look at them there plates and see what we had before going further," we cast about for some surer method. Carefully looking over the ground, I found that some seventy-five feet from the nest there was a shallow depression just deep enough to entirely conceal a man lying prone on the soft, ploughed ground. So the rubber tube was substituted for the line and the bulb end carried up the slope to the little hollow. As it would be impossible from this position to see the bird, and as we had discovered that a low whistle or noise caused her to leave the nest at once, some method of signaling had to be arranged. The trolling line suggested a way, as we found that it would reach readily from the bulb in the hollow to the edge of the field. So, attaching one end of it to my wrist, I took my position flat on the ground in the middle of the field, with a hot noon sun pouring down over-head, and awaited the signal,—a vigorous jerk on the trolling line, to be given by Mr. Gleason, who from a distance was watching with a glass the movements of our unwilling sitter. The signal soon came, and these complicated and rather juvenile tactics proved so successful

that very soon Mrs. Plover did not so much as change position at the click of the shutter, and when driven away to rearrange the camera between exposures, came quickly back again. In a short time we had exposed all the plates that seemed necessary, and retired from the field conquerors, though leaving the foe in peaceful possession. Returning to the house for supplies for a new expedition, a lady member of the party, who, from a shady hammock, had been watching for several hours these rather boyish antics, saluted us with the withering remark, "About four years of age, I should think, instead of forty." But we hoped that the end would




KILLDEER, NEST, AND EGGS

justify the means, and were anxious to inspect the developed results. This part of the work was accomplished a day or two later, and the pictures here presented show, I think, that our efforts were not entirely in vain. Several others were not so good. In one, the female sits quietly on her nest, back to the camera, and in coloration blends admirably with the surroundings. In another, she is crouching in a half uncertain attitude, while in still another she stands erect, revealing the four eggs directly beneath her, and with ruffled plumage seems a little resentful of the intrusion. In all, it will be noticed that the bill is partly open, either because it was a very warm day, because the poor bird was startled and ill at ease, or, it may be, because it was no easy matter for this always loquacious bird to keep its mouth shut even when posing for its picture.

A Least Bittern Portrait

BY E. G. TABOR

(See Frontispiece)



ON the morning of May 27, 1897, equipped with an extra supply of patience and a 5 x 7 'Premo B' camera fitted with rapid rectilinear lens, my plate-holders filled with unexposed plates, and accompanied by my wife, who has been a partner in all of my successful trips, I started for Otter Lake, Cayuga County, N. Y.

It was a beautiful morning, with not a breath of air stirring (by the way, this is the hardest of all things to control, and is an absolute necessity if you are to make fine, clear-cut negatives of birds and their natural surroundings), and the lake looked like a mirror. It took but a minute to get the large, flat-bottomed row-boat ready for the start, and we were soon gliding along, an oar's-length from shore, scanning every tree, bush, and bunch of rushes, in search of nests, those of the Red-winged Blackbird being very plenty and placed both in bushes or rushes in about equal numbers. A pair of Kingbirds had selected as the place for their summer home, a large, low willow limb which projected over the water: a peep into the nest revealed three eggs, common, yet so beautiful in their bed of wool and feathers.

Our next finds were several nests of a pair of Long-billed Marsh Wrens, which looked more like mouse-nests than anything else I have in mind. As we could return to these later, if unable to find anything better, we had not yet exposed a single plate, reserving them for a rare or unusual find.

We were in search of nests of the Least Bittern, and as we were passing that part of the shore where they always nested, we soon located a nest, but as it only contained one egg, another nest must be found. A male Least Bittern flew up a short distance ahead of us and 'dropped in' back of the bushes. We rowed down to the place from which he flushed, and standing up in the boat looked around, and not more than a boat's-length ahead, we espied a female sitting on a nest. I pushed the boat very carefully to within a couple of feet of the nest, and prepared to make an exposure. The camera was set to focus on an object 34 inches from cap of lens, and I moved it back and forth until the focus was perfect, the diaphragm was closed to f 16, and an instantaneous exposure with speed at $\frac{1}{25}$ " was made.

As most of my operations, preparatory to making the exposure, were of necessity carried on within three feet of the bird on the nest,

she at several times started to leave it; but when the bird moved I kept still, and when she kept still I worked; in this way I finally completed my preparations. The peep I got of the eggs as she partly raised off from them, just as I finished, made me squeeze the bulb before I intended to: but the result I obtained fully satisfied me, for in no other way could I describe the results of this trip, and what I saw and learned of the habits and home-life of the Least Bittern.

Loons at Home

BY WILLIAM DUTCHER



I SHOULD like to say a few words to the readers of BIRD-LORE on the subject of making good photographs of birds. Don't conclude at once, when you see pictures of nests, or birds in their wild state, that it is an easy matter to get them. A year ago, when I saw the fine exhibition of slides presented by Mr. Brewster and Mr. Chapman at the American Ornithologists' meeting, I at once concluded that it would be an easy thing for me to get similar results. So I forthwith invested much good money in purchasing a camera, and all the accompanying outfit; but not until I had worried all my photographic friends for advice of all kinds. With all the confidence of an expert I started on this unknown sea, and I must confess to you, patient reader, that my efforts were a brilliant string of failures, for from the more than one hundred and twenty-five plates that I exposed, I succeeded in getting only two good negatives. But I had lots of fun and plenty of experience, and am just as proud of my two good negatives as the celebrated old hen that had but one chick. If you want to learn to be patient and persevering, try photographing in the fields and woods. If you wish to learn more of the habits of birds than you can in any other possible way, try for hours to get them familiar enough with you and your camera to go on with their nest-building, or feeding their nestlings. Besides all this, in later days, whenever you see the photograph, it will recall to you every pleasant moment that you spent in getting the negative.

That you may share with me some of the pleasures that I experienced in getting a negative of a nest of eggs, from which the accompanying picture was made, let me tell you the following story about the Great Northern Diver, more commonly known as the Loon, and among the scientists as *Gavia imber*.

Those of you who are familiar with the Adirondack or Canada lakes can easily picture the surroundings of this nest, which I found in Higley Lake, Canada. This is a small body of water, hardly more than a very large pond. This section of Canada may be called a lake region, and is very beautiful. Most of the lakes are surrounded with forests, in which the contrasting colors of the ever-greens and white birches add greatly to the natural beauty of the scenery. This nest was built in very shallow water, about eight feet from the shore. It was, at its base, about twenty inches in diameter, and at its apex about fifteen inches wide. It was about nine inches above the water at its greatest height, and composed entirely of mud, so far as I could determine, of a very dark color. The water where it was placed was not over six or eight inches deep, but it was really a very hard matter to determine exactly where the water ended and the mud commenced. This I ascertained to my sorrow and discomfiture when I undertook to set up my tripod. Standing in a very round-bottomed boat and trying to plant a tripod in silt of seemingly unfathomable depth is no easy job, as I found out. Finally, however, I succeeded in getting what I now have the pleasure of showing you: but I dare not tell you of the beautiful failures I made before this picture was obtained. When I first discovered the nest, the Loon was upon it, but as soon as she saw me she slid off into the lake and made every effort to dive. It is true that her head was under the water, but her back was not until she had gone some feet from the nest out into the lake, where the water was deep enough to entirely cover her. She did not then appear until she was well across the pond, where she was joined by her mate. The nest contained only one egg when I first saw it: but in the water, on the lake side of the nest, I found another egg, which the mother bird had evidently rolled out of the nest, perhaps in her fright and hasty departure when she first saw me. This egg I replaced in the nest by lifting it with the broad end of the boat oar, thinking, perhaps, that handling it might cause the Loon to desert the nest. The egg that was in the water was many shades lighter in color than the one found in the nest, which leads me to believe that the eggs of birds that habitually breed in damp mud nests acquire a darker color from stains.

In another pond of about the same size, and within half a mile of Higley Lake, I subsequently saw a pair of Loons that had but one young, so far as I could ascertain. If there was another it was kept well hidden. I was very much interested in watching the methods by which the old birds kept the little fellow out of

danger. When I first saw the family group, both parents and the little one were together; but immediately on the appearance of my boat the whole group disappeared under the surface. The young bird soon came to the surface again in about the same spot, but the parents were some distance off on the other side of the boat, so that I was between them. Both parents were perfectly quiet until I undertook to row toward their offspring, when



NEST AND EGGS OF LOON

Photographed from Nature, by William Dutcher

one of the parents uttered what was to me a very new and peculiar cry, on hearing which the little one immediately dove: the cry was entirely different from the usual loud, maniacal cry of the Loons. As soon as the young one appeared I again started toward him, when the old bird repeated the same cry, and down went the little fellow. It was very evident that he knew whenever he heard that warning cry he must disappear at once. I had so much sympathy for the lonely little chap that I left him, after I had tried the experiment a number of times. As soon as I drew away to another part of the pond the old birds uttered the usual well known cry of the species, but the little one then remained on the surface and was soon joined by the parent birds.

A few weeks later the same group acted in an entirely different manner; then they remained together, and as the boat approached, the old bird with its bill seemed to push the young one under the water before it dove itself.

If this bit of the domestic life of these two Loon families has interested you as much as it did me, I shall feel amply repaid for the thirty-two miles I had to drive each time I visited them.

Photographing a Bluebird

BY ROBERT W. HEGNER

With Photographs from Nature by the Author.



During the severe cold of January and February, 1895, most of the Bluebirds were thought to have perished. So it is with the spirit of a genuine Audubon that we hail their return in ever increasing numbers each succeeding spring. How sadly we should miss these little friends may be judged by the great commotion among ornithologists caused by their supposed extinction. In order to have more than a mere remembrance of their habits, I set out one day in the summer of 1898, at Decorah, Iowa, to obtain photographs of them in their haunts, and secured two interesting negatives of the female, as shown



BLUEBIRD FLYING TO NEST

in the accompanying illustrations. The history of the case is as follows: A pair of Bluebirds, after several previous attempts at house-keeping, and subsequent removals by 'small boys,' at last selected an old, deserted, Woodpecker's hole in a fence-post, and built, as usual, a nest of dry grass with a softer lining of horse-hair. The birds had already begun incubating the three pale blue eggs, which formed the set, when I disturbed them. I crept within five feet of the post be-

fore the female left the nest and joined her mate, who had been keeping guard in a neighboring plum tree.

After focusing my camera to within three feet of the post, and arranging a string attachment, I concealed myself in some bushes about seventy-five feet away. I waited patiently for ten minutes

before the female left the tree and flew down to the fence. The male followed close after, and they hopped about the post and wires, getting nearer and nearer the nest, until the female flew straight into the hole. A snap-shot, just before she reached the entrance, was only partially successful, but shows very clearly the pose of the bird's head and neck while it was in the air. It was made in a twenty-fifth of a second with the lens stopped down to sixteen. I disturbed the female several times before she gained the desired position at the nest-opening: but, finally, the snap of the shutter helped bring to life one of my best bird-pictures.




BLUEBIRD AT NEST

A knowledge of the bird's nesting habits is a prime requisite in avian photography. Much patience is needed, as failures are very numerous. A camera which may be focussed to within two or three feet is an absolute necessity in order to make the picture large enough. Most of my failures have been caused by the lack of bright sunlight, under-exposure, or movement of the bird the instant the picture was taken; but one good photograph is sufficient reward for many trials.

A Tragic St. Valentine's Day

BY ANNIE TRUMBULL SLOSSON



THE cold wave reached us at Miami, on Biscayne Bay, Florida, in the night of February 12, 1899. It was preceded by severe thunder storms in the evening. On the 13th, Monday, it was very cold all over the state, with snow and sleet as far south as Ormond and Titusville. Our thermometers at Miami ranged from 36° to 40° during the day. As I sat in my room at the hotel, about four in the afternoon, I saw a bird outside my window, then another and another, and soon the air seemed full of wings.

Opening my window to see what the visitors could be, I found they were Tree Swallows (*Tachycineta bicolor*). Several flew into my room, others clustered on the window ledge, huddling closely together for warmth. There were hundreds of them about the house seeking shelter and warmth. They crept in behind the window blinds, came into open windows, huddled together by dozens on cornices and sills. They were quite fearless; once I held my hand outside and two of them lighted on its palm and sat there quietly. As it grew dark and colder their numbers increased. They flew about the halls and perched in corners, and the whole house was alive with them. Few of the guests in the hotel knew what they were; some even called them 'bats,' and were afraid they might fly into their faces or become entangled in their hair. One man informed those about him that they were Humming Birds, 'the large kind, you know,' but all were full of sympathy for the beautiful little creatures, out in the cold and darkness. A few were taken indoors and sheltered through the night, but 'what were these among so many?'

The next morning the sun shone brightly though the weather was still very cold—the mercury had fallen below 30° during the night. But as I raised the shade of one of my eastern windows I saw a half-dozen of the Swallows sitting upon the ledge in the sunshine, while the air seemed again filled with flashing wings. I was so relieved and glad. Surely the tiny creatures, with their tints of steely blue or shining green contrasting with the pure white of the under parts, were more hardy than I had feared. But alas! it was but a remnant that escaped. Hundreds were found dead. Men were sent out with baskets to gather the limp little bodies from piazzas, window ledges, and copings. It was a pitiful sight for St. Valentine Day, when, as the old song has it,

"The birds are all choosing their mates."

Clark's Crows and Oregon Jays on Mount Hood*

BY FLORENCE A. MERRIAM



CLOUD CAP INN, the loghouse hotel fastened down with cables high on the north side of Mount Hood, is too near timber-line to claim a great variety of feathered guests, but Oregon Jays and Clark's Crows or Nutcrackers are regular pensioners of the house. The usual shooting by tourists does not menace them, for the

nature-loving mountaineers, who keep the Inn and act as guides to the summit, guard most loyally both birds and beasts. They like to tell of a noble Eagle which used to fly up the cañon and circle over the glacier every day, and they recall with pleasure the snowy morning when an old Blue Grouse brought her brood to the Inn, and the birds ate the wheat that was thrown them with the confidence of chickens. The Grouse were, apparently, regular neighbors of the Inn, and while there I had the pleasure of seeing a grown family. They fed on the slope close above me with the unconcern of domestic fowls, conversing in turkey-like monosyllables as they moved about, and two of them came within a few feet and looked up at me—that not forty rods from the Inn! The pleasure of the sight was doubled by the reflection that such things could be so near a hotel, even on a remote mountain.

It was delightful to see how familiarly birds gathered about the house. You could sit in the front doorway and when not absorbed in looking off on the three wonderful snow peaks—St. Helens, Rainier, and Adams—rising above the Cascade range, could watch Oregon Juncos, Steller's Jays, Oregon Jays, and Nutcrackers coming down to drink at the hydrant twenty feet away; while the Ruby Kinglet and White-



CLOUD CAP INN

*Read before the American Ornithologist's Union, Nov. 16, 1898.

crowned Sparrow, together with Townsend's Solitaire and other interesting westerners, moved about in the branches of the low timber-line pines; and Lewis' Woodpeckers, with their long, powerful flights, crossed over the forested cañons below. Crossbills had stayed around the house sociably for three weeks together, Mrs. Langille, the noble old mother of the mountaineers, told me. She said they would fly against the logs of the house and call till she went out to feed them. They left with the first heavy storms, though usually, she said: "That's the time when we have birds come around the house—when there are storms." And a friendly hospice the feathered wayfarers find it so long as the Inn is open!

The Oregon Jays and Clark's Crows are, as I said, the regular pensioners of the house. The Jays look very much like their relatives the Canada Jays, but are darker, and when you are close to them the feathers of their backs show distinct whitish shaft-streaks. The Crows have the general form and bearing of Crows, but are black only on wings and tail, their general appearance being gray. Speaking of the birds, Mrs. Langille said: "If I was in the kitchen myself I'd have them come right to the porch outside; when I'm in the kitchen I'm always throwing out crumbs for the birds and squirrels, and I've had the Jays come and sit right down on the block where I was cutting meat and take the fat right out of my hands." Clark's Crows, she said, would not eat from her hand, but would sit on the back porch and call for their breakfast.



CLARK'S CROW

When I was at the Inn, the Chinese cook used to throw scraps from the table over a lava cliff, and both Crows and Jays spent most of their time carrying it off. As the foot of the cliff was one of the best places to watch them, I spent part of every day there, and when the smell of coffee grounds got too strong, consoled myself by looking through the trees up at the grand white peak of Hood.

It was interesting to see the difference in the ways of the two birds. The Nutcracker would fly down to the rocks with rattling wings, and, when not too hungry to be critical, would proceed to investigate the breakfast with the air of a judge on the bench, for

he is a dignified character. To touch the hem of his robe to the food would have been defilement, so he went about pressing his wings tight to his sides, sometimes giving them a little nervous shake. To smile at this sober-minded person seems most disrespectful, but the solemnity of his gambols was surely provocative of mirth. Not content with turning his long-billed head judicially from side to side as he advanced through the scraps, if the biscuit on his left was not to his mind, with one great ungainly leap he would box half the compass and plant his big feet before a potato on his right. This he would proceed to probe with a grave air of interrogation, and if he decided the case in the negative would withdraw his beak and pass to the next case on the docket. Once when the potato was half a waffle, he pried it up tentatively with his long bill, and at last, deciding in its favor, proceeded to fly off with it, his long legs dangling ludicrously behind him.

The Oregon Jays were quite unlike their Crow cousins. They would come flying in, talking together in sociable fashion, and drop down so noiselessly you could but be struck by the difference between fluffy owl-like feathers and stiff quills. Sometimes one of the Jays would touch the side of a tree a moment before dropping lightly to the ground. All their motions were quick and easy, if not actually graceful, and they worked rapidly, with none of the profound deliberation shown at times by the Nutcracker. The smaller pieces of food they ate; the larger ones they carried off, usually in their bills, occasionally in their claws. In eating, the Jay would

sometimes adopt the Blue Jay style and put his food under his foot, where he could pull it apart, throwing up his head to swallow. When the food was soft and too large to swallow at one gulp, both Crows and Jays would carry it to an evergreen, lay it down on a twig before them, and there eat comfortably, as from a plate. Both birds often flew to the ledges of the cliff for food that had lodged there in



OREGON JAY

falling, and it made a busy scene when eight or ten of the big fellows were flying about the place at once.


(To be concluded.)

For Teachers and Students

Suggestions for Bird-Day Programs in the Schools

BY C. A. BABCOCK

(Originator of Bird-Day)



A BIRD-DAY exercise, in order to have much value educationally, should be largely the result of the pupils' previous work, and should not be the mere repetition of a prepared program, taken verbatim from some leaflet or paper. The program should be prepared by the pupils, under the direction of the teacher, and should contain as many original compositions or statements about birds, derived from personal observation, as possible.

Bird-Day should be announced some weeks beforehand, in order to give the children time to prepare for it. In the meantime, direct them to observe the birds, and allow from five to ten minutes each morning to receive the reports. Direct that crumbs be scattered in the back yards, and cups containing seeds be put up in the trees, or on the fences, and that bones from the table be fastened where they can be seen from the windows. Then, with an opera glass, if one can be obtained, results are to be looked for.

For directing the young observer, write upon the board a scheme like this:

ENGLISH SPARROW

Length from tip of beak to end of tail?

What is the shape, color, and size of beak?

What is the color of legs and feet?

How many toes? Which way do they point?

Gait upon the ground,—does it walk, hop or run?

Color of head and throat? Color of under parts?

Color and marking of back?

Difference in markings of male and female?

Describe actions which indicate its character.

Is it pugnacious? Is it brave? Is it selfish?

Does it trouble other birds?

Describe its voice or song. Does it utter notes indicating diverse feelings, as joy, anger? What syllables best recall some of its notes?

For the younger pupils a few of these questions, perhaps two or three, will be sufficient for one exercise. Children will vary, and often contradict one another in answering the same questions. Dwell

upon each question till it is answered correctly, and all agree upon the answer.

A similar plan may be followed for studying the Robin, Bluebird, Catbird, Oriole, or other birds as they arrive, or as they become accessible to certain of the pupils. In April, two years ago, one little girl had observed, and described accurately, seventeen different species of birds which she had seen in the little yard of her home. They had been attracted by the food she had put out for them.

The nest-building of birds is also a good subject for observation, the Robin being, perhaps, the best species for a first study.

QUESTIONS ON NEST-BUILDING AND NESTING HABITS

Which bird does most building, the male, or the female?

Do both carry material?

Does the male ever seem to be acting as escort or guard to his mate?

What materials are used? What is the appearance of the nest? Its situation—sheltered, or not?

After the nest is completed, watch it till the young are hatched. Which bird sits upon the eggs? Does the male ever relieve his mate at this task? Does he bring food to her? Does he spend some time singing to her, as if he were trying to keep her cheerful? Does he protect her from attack by birds or other enemies?

SOME QUESTIONS TO BE ANSWERED ABOUT ROBINS

Learn to distinguish the voices and call notes of the male and female. Which bird wakes first in the morning and calls the other? You may also notice, sometimes, in the night, that one bird wakes and calls the other. Which one generally wakes first at these times?

Do Robins raise more than one brood in a season? If so, do they use the same nest twice? If they raise two broods, what becomes of the first, while the mother is sitting upon the eggs for the second?

Watch for a Robin leading out a family of chicks. Notice the feeding after the birds are old enough to run and fly fairly well. The young birds are placed apart by the parent, who visits each one in turn, and rebukes any who tries to be piggish, sometimes nipping it with its bill when it runs up out of turn. Notice this parent teaching the young to sing,—it is a very interesting sight.

The teacher will need some good manual to aid in identifying some of the species, though much of the work the first season would better be upon common, well-known birds. The following are recommended:

·Handbook of Birds of Eastern North America,' by Frank M. Chapman, published by D. Appleton & Co.; ·Bird-Craft,' by Mabel Osgood Wright, published by The Macmillan Company.

FOR BIRD-DAY PROGRAMS

For the first Bird-Day in every school it would be well to have some one read Senator Hoar's petition of the birds to the Legislature of Massachusetts. This remarkable paper deserves reading by all friends of birds at least once a year.

Compositions.—Have also original compositions, describing some bird studied, or describing some of its habits, especially its habit of feeding, and the actions showing its disposition.

Personations.—Special interest will be awakened by having 'personations' of birds. These are descriptions of birds told in the first person, as if the bird itself were telling its own story. An accurate account of the bird's appearance, habits, feelings, and life from the bird's view-point, is given, but without telling the bird's name. At the close of the reading, the hearers vote upon the name of the bird 'personated.'

Audubon Society Literature.—The teacher should also obtain circulars from the secretaries of the New York, Massachusetts, Pennsylvania and other Audubon Societies. These will give information concerning the rapid destruction of birds. Extracts may be read from them.

Poems.—Extracts from the poets naturally form an interesting feature of Bird-Day. Poets are generally bird-lovers and bird-seers. Among the poems peculiarly adapted are the following:

'Robert O'Lincoln,' Bryant; 'The Mocking Bird,' Sidney Lanier; 'The Sky Lark,' Shelly; 'The O'Lincoln Family,' Wilson Flagg; 'The Rain Song of the Robin,' Kate Upson Clark; 'The Titmouse,' R. W. Emerson; 'The Eagle,' Tennyson; 'To The Skylark,' William Wordsworth.

Personal Experiences.—Another pleasant part of the program will be the short statements of facts about birds, by the pupils, obtained from their own observation. Birds of the Bible may also be given in short extracts.

Prose Selections.—John Burroughs' 'Birds and Poets,' and 'Wake Robin;' Bradford Torrey's 'Birds in the Bush;' Olive Thorne Miller's 'Bird Ways,' and many other books, abound in suitable passages for Bird-Day.

The pupils will enjoy preparing a Bird-Day program much more than learning little set speeches from one already prepared. The preliminary observation of birds will arouse an enthusiasm that will be of great value in all educational work.

Summer Boarders for Girls and Boys

THE Bureau of Nature Study of Cornell University offers to assist all boys and girls who want to take bird boarders this season. By addressing this Bureau, at Ithaca, N. Y., one may receive a copy of an admirable leaflet entitled 'The Birds and I,' containing numerous designs for houses which may be constructed for the occupation of the expected 'boarders.'

A Bird-Day Program

BY ELIZABETH V. BROWN

Washington Normal School]



BIRTHDAYS, red letter days, memorial days, arbor days and bird days!

The two hundred days of the school calendar are hardly sufficient to meet the special demands made upon them in the interests of history, literature, and philanthropy. After all, is not this call for specialization something of a reproach to both home and school? If the child is symmetrically developed, harmoniously educated, will not all these influences find their proper place and expression in his life in the *regular* course of events?

But in the meantime since 'days' are ordained, it is highly important that they shall be celebrated in a manner to make lasting impressions on the minds and hearts of children. The mental hysteria resulting from the spasmodic, sentimental fervor worked up for this cause to-day, and for that to-morrow, is to be strongly condemned.

As in every other subject, an interest in *birds* should be based upon the knowledge gained by the child primarily through his own observations and experiences, supplemented and enriched later by what he reads or has told him. The interest thus aroused leads to sympathy and love as enduring as life itself.

Hence the Bird-Day program should mark the culminating rather than the initial point of bird study for the year.

The children should be led to anticipate it, and should be prepared for it in as many ways and for as long a time as possible. All that nature lovers have written or poets sung will have deeper significance after the child's contact with the birds of his neighborhood, as seen in parks, woods, or fields. To see their pictures is not enough. Field work alone can give the stimulus which leads to fellowship, sympathy, love, and protection.

For young children especially, interest is most readily aroused through the study of the *activities* which ally bird and child. The character and the adaptation of birds' clothing, foods and homes to their peculiar needs and environment; glimpses of nest-life; characteristic traits; disposition: the cleverness of the parent birds in outwitting enemies and protecting the young: the skillful uses of tools—bills and claws—are all readily appreciated by the children. Add to these, studies in protective coloration, migration, the relation

of birds to insects injurious to vegetation, and kindred subjects, which form a never-failing source of delight. Through such work, the child learns almost unwittingly much of bird structure, classification, and description which would otherwise prove dry and barren of interest.

The boy who thus comes into fellowship with birds will not delight in beanshooters or find his chief joy in robbing birds' nests and violating game laws: while his sister will try to find something more ornamental for her hat than slaughtered birds.

THE PROGRAM

While programs must vary according to the needs and ability of the children, a few suggestions may be helpful to all.

DECORATION

'Sharp Eyes,' and 'I Spy,' by William Hamilton Gibson, 'Nature's Hallelujah,' and 'The Message of the Bluebird,' by Irene Jerome, are full of delightfully suggestive and artistic bits of bird-life for black-board pictures.

A pretty corner may be made by a small bush or the branch of a large tree in which the nests collected by the children are appropriately placed.

Pictures of bird-lovers and writers should be in evidence. Audubon, Wilson, John Burroughs, Bradford Torrey, Olive Thorne Miller, and others. Many of these may be found in recent magazines.

Anecdotes and short sketches from their books may be told or read.

COMPOSITIONS

Compositions prepared in advance, on various phases of bird-life, may be read by their young authors. These may be the result of work previously done in class along the lines before mentioned, or of new observations and experiences gathered for Bird-Day. The greater the variety of topics, the better.

Descriptions of individual birds, comparisons of birds, individually or by classes, as to:

Food.—Character; where, when, and how obtained.

Home.—Location; materials; construction; appearance.

Young.—Number; appearance; care and education.

Songs and Calls.—Emotions expressed; character, short or sustained, high or low, sweet or harsh, etc.

Relations.—Names of other birds of same class.

Bird Craftsmen.—Masons, miners, weavers, tailors, etc.

Tree-top Neighbors.—Spring, summer, fall and winter.

How Birds Travel.

How Birds Help the Farmers.

Invitations to the Birds.—Boxes put up for them; seed-cups, bits of suet nailed to posts or trees.

CHALK TALKS

Stories may be told by teachers or pupils with accompanying illustrations hastily sketched on the blackboard as the story progresses. The following lend themselves readily to this work:

'The Ugly Duckling,' 'The Daisy and the Lark,' Hans Christian Anderson; 'The White Heron,' Sarah Orne Jewett; 'The White Blackbird,' Guy de Maupassant; 'The Crane Express,' Child World; 'The Crow and the Pitcher,' 'The Fox and the Crane,' 'The Crane and the Crows,' Æsop's Fables.

FOR READING OR RECITATION

'Nest Egg,' Robert Louis Stevenson; 'Anxiety,' George Macdonald; 'The Song Sparrow,' 'The Veery,' Dr. van Dyke; 'The One in the Middle,' Margaret Eyttinge; 'The Bluebird,' Emily Huntington Miller; 'The Peter Bird,' Henry Thompson Stanton; 'The Robin,' Celia Thaxter; 'Brother Robin,' Mrs. Anderson; 'The Birds' Orchestra,' Celia Thaxter; 'The Sandpiper,' Celia Thaxter; 'Little Birdies,' Tennyson; 'The Brown Thrush,' Lucy Larcom; 'The Titmouse,' Emerson; 'The Stormy Petrel,' Barry Cornwall; 'The Sorrowful Sea Gull,' Child World; 'Robert of Lincoln,' 'The Return of the Birds,' Bryant; 'The Blackbird,' Alice Cary; 'The Crow's Children,' 'The Chicken's Mistake,' Phoebe Cary; 'What the Birds Said,' Whittier.

Migration Tables for April and May

AT our request, Dr. A. K. Fisher has furnished the following notes on the spring migration. They are based on fifteen years' observation and will therefore prove valuable as a guide, and interesting for comparison, to other observers. A list of Mississippi Valley migrants, which we expected to receive, unfortunately arrived too late for publication, while a list from Philadelphia, by Mr. Witmer Stone, is necessarily omitted for lack of space.—ED.

*AVERAGE DATES OF ARRIVAL OF THE COMMONER BIRDS AT
SING SING, N. Y., DURING APRIL AND MAY*

BY DR. A. K. FISHER

APRIL 1 TO 10

Pied-billed Grebe, Wilson's Snipe, Sparrow Hawk, Osprey, Kingfisher, Fish Crow, Cowbird, Savanna Sparrow, Vesper Sparrow, Swamp Sparrow, White-throated Sparrow, Tree Swallow.

APRIL 10 TO 20

Green Heron, Black-crowned Night Heron, American Bittern, Pigeon Hawk, Yellow-bellied Sapsucker, Purple Finch, Chipping Sparrow, Field Sparrow, Myrtle Warbler, Yellow Palm Warbler, Large-billed Water Thrush, Ruby-crowned Kinglet, Hermit Thrush.

APRIL 20 TO 30

Chimney Swift, Least Flycatcher, Towhee, Purple Martin, Barn Swallow, Bank Swallow, Blue-headed Vireo, Black and White Warbler, Catbird, Brown Thrasher, House Wren, Wood Thrush.

MAY 1 TO 5

Spotted Sandpiper, Hummingbird, Kingbird, Bobolink, Baltimore Oriole, Red-eyed Vireo, Yellow-throated Vireo, White-eyed Vireo, Parula Warbler, Yellow Warbler, Black-throated Green Warbler, Black-throated Blue Warbler, Ovenbird, Maryland Yellow-throat, Yellow-breasted Chat, Redstart, Wilson's Thrush, Olive-backed Thrush.

MAY 5 TO 10

Solitary Sandpiper, Yellow-billed Cuckoo, Black-billed Cuckoo, Whip-poor-will, Nighthawk, Crested Flycatcher, Orchard Oriole, Yellow-winged Sparrow, Rose-breasted Grosbeak, Scarlet Tanager, Cliff Swallow, Rough-winged Swallow, Warbling Vireo, Blue-winged Warbler, Golden-winged Warbler, Magnolia Warbler, Long-billed Marsh Wren.

MAY 10 TO 15

Least Sandpiper, Wood Pewee, Green-crested (Acadian) Flycatcher, White-crowned Sparrow, Indigo Bunting, Nashville Warbler, Worm-eating Warbler, Chestnut-sided Warbler, Kentucky Warbler, Wilson's Warbler.

MAY 15 TO 20

Olive-sided Flycatcher, Yellow-bellied Flycatcher, Bay-breasted Warbler, Black-poll Warbler, Blackburnian Warbler, Small-billed Water Thrush, Canadian Warbler, Gray-cheeked Thrush.

MAY 20 TO 25

Alder Flycatcher, Tennessee Warbler, Mourning Warbler.

For Young Observers

Boys and girls who study birds are invited to send short accounts of their observations to this Department.

The Legend of the Salt

BY FRANK M. CHAPMAN

A GREAT many years ago a little boy, whom I knew very well, accepted the advice of an elder, and went out with a salt-cellar to make friends with the birds. But they would not have him, even with a 'grain of salt,' and it was not until he was considerably older that he learned he had begun his study of birds at the wrong end. That is, you know, the wrong end of the bird, for it is not a bird's tail, but his bill, you must attend to if you would win his confidence and friendship.

So, instead of salt, use bread-crumbs, seeds, and other food, and some day you may have an experience which will surprise those people who would think it a very good joke indeed to send you out with a salt-cellar after birds. I have recently had an experience of this kind. It happened in the heart of a great city, surely the last place in the world where one would expect to find any birds, except House Sparrows. But Central Park, New York City, the place I refer to, contains several retired nooks where birds are often abundant. A place

known as the 'Ramble' is a particularly good one for birds, and during the past winter, when it was not too cold, I have often gone from my study in the nearby Museum of Natural History to eat my luncheon with the birds in the Ramble. Many other bird-lovers have also visited the Park to study and feed the birds, and, as always happens when birds learn that they will not be harmed, they have become remarkably tame.

This is especially true of the Chickadees, who, under any circumstances, seem to have less fear of man than most birds. When I



A BIRD IN THE HAND

Photographed from nature, by F. M. Chapman.

entered the Ramble they soon responded to an imitation of their plaintive call of two high, clearly whistled notes. And in a short time we became such good friends that I had only to hold out my hand with a nut in it to have one of them at once perch on a finger, look at me for a moment with an inquiring expression in his bright little eyes, then take the nut and fly off to a neighboring limb, where, holding it beneath his toes, he would hammer away at it with his bill, Blue Jay fashion.

One day I induced one of them to pose before my camera, and, as a result, I now have the pleasure of presenting you with his portrait, as an actual proof that nuts are much more effective than salt, in catching birds. So, after this, we won't go out with salt-cellars, but with a supply of food: nor should we forget to take a "pocketful of patience," which, Mrs. Wright says, is the salt of the bird-catching legend.

The February Walk Contest

WE have been delighted with the interest aroused by our request for descriptions of February walks, and in imagination have enjoyed outings throughout a large part of the United States with our little correspondents.

We have found ourselves obliged to give two prizes, one of which goes to Mildred A. Robinson, of Waltham, Massachusetts, whose essay will appear in our next number; the other to Floyd C. Noble, of New York City, whose description of a walk in Central Park appears in this issue of BIRD-LORE.

Much to his surprise, the Editor found that he was competing for the prize he himself had offered! He had written an account of some Central Park birds for this department before Master Noble's article was received, and is obliged to confess that Master Noble mentions several species which he had not observed. He, therefore, presents only that part of his manuscript relating to the Chickadee, and leaves Master Noble to tell of the other birds in the Park.

The selection of the winning essays was made with much difficulty, and, in addition to the two chosen, we would especially commend those written by the following named boys and girls:

Philip Baker, Indianapolis, Ind.; Harriet J. Benton, New Bedford, Mass.; Zelta Brown, Yuma, Ariz.; Donald Bruce, East Hampton, Mass.; Walter S. Chansler, Bicknell, Ind.; Marion Flagg, 90 Washington St., Hartford, Conn.; Charles B. Floyd, Brookline, Mass.; Kathryn Gibbs, Kalamazoo, Mich.; Albert Linton, Moorestown, N. J.; Clara T. Magee, Moorestown, N. J.; George S. Mac Nider, Chapel Hill, N. C.; Barnard Powers, Melrose, Mass.; Elden Smith, Milville, Mass.; Lydia Sharpless, Haverford, Pa.—ED.

A February Walk in Central Park, New York

BY FLOYD C. NOBLE

(Aged 14 years)



ON February 18, 1899, my friend and I started out 'bird-hunting,' as usual, in the 'Ramble,' Central Park. It was during the comparatively warm spell after the blizzard of the 12th, and the preceding zero weather. On the way we saw a Starling, perched high on a building, trying to sing. On entering the Park we saw a White-throated Sparrow. I have seen this species more times than any other this month—of course, excepting the common Sparrow.

On nearing our 'hunting-grounds,' we heard the familiar 'cree-e' of a Brown Creeper, and soon discovered the little fellow hard at work, as usual. A little later we came upon the beautiful Cardinal, with his two wives. It is a fact that there are one male and two

females, though probably only one is his real mate. He does not, however, appear to be partial to either.

Further on we found what we were chiefly looking for—a flock of lively little Chickadees. I found that I had only a very small supply of hazelnuts with me, but I made the best of them. There was a good deal of snow on the ground, which made the Chickadees unusually tame—being hungry. They would light on our hands, inspect the pieces of crushed nut there, knock off the ones that did not suit them, and finally fly off with one—usually the largest. We soon began to recognize separate birds, and gave them names; such as ‘Buffy,’ ‘Pretty,’ etc. Then our attention was attracted by the queer noise made by the Nuthatch, and this trunk-crawling friend of ours appeared. We think that continued close inspection of tree-trunks has made him near-sighted, because when you throw him a piece of nut he generally just gazes at it, grunts a little, and then looks at you again. My cousin suggested that when he did find what you threw him, it was by the sense of hearing rather than that of sight, as he can generally find a big piece that makes a noise in falling. When he succeeds in getting ‘something good,’ he wedges it into the bark somewhere and hits it with his bill.

But, between the Nuthatch, the Chickadees, and the hungry squirrels—that would sit up with their paws on their breasts, and their heads on one side, imploring for food, it is needless to say successfully,—our small supply of nuts was soon gone. So we went home as fast as we could, procured more nuts, and in twenty minutes were again in the ‘hunting grounds.’ But we found, to our dismay, that others had monopolized our flock of chickadees! However, what partly compensated for this, was a good close view of a Downy Woodpecker. There is a pair of these birds around here, which you are almost sure to see,—either together or singly.

But it was soon time to go home, and on the way we heard the lively song of the European Goldfinches, and soon found four of them high up in a tree. They are shy birds, and flew as we approached. They feed on pine cones, and a flock of them will take possession of a pine tree, hide themselves in the dark tufts of pine needles, and eat the seeds at their leisure. The only way you can have knowledge of their presence is by the frequent cracking of the seeds heard. For a long time we thought they were Crossbills, but one day a flock of noisy Sparrows came into the tree and drove the quiet Goldfinches out of their tufts—much to my surprise, for I did not suppose that Goldfinches, which I had been accustomed to find singing loudly, could keep so quiet. We also saw a Song Sparrow quietly picking away at some bird-seed scattered there.



The Myth of the Song Sparrow

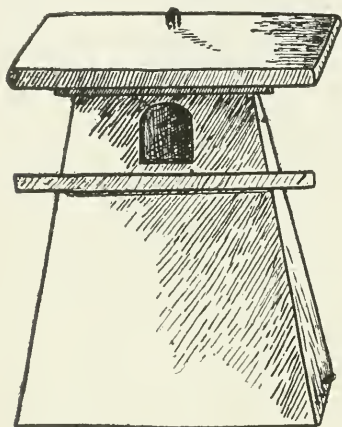
BY ERNEST SETON THOMPSON

His mother was the Brook, his sisters were the Reeds,
And they every one applauded when he sang about his deeds.
His vest was white, his mantle brown, as clear as they could be,
And his songs were fairly bubbling o'er with melody and glee.
But an envious Neighbor splashed with mud our Brownie's coat and vest,
And then a final handful threw that stuck upon his breast.
The Brook-bird's mother did her best to wash the stains away,
But there they stuck, and, as it seems, are very like to stay.
And so he wears the splashes and the mud blotch as you see,
But his songs are bubbling over still with melody and glee.

Notes from Field and Study

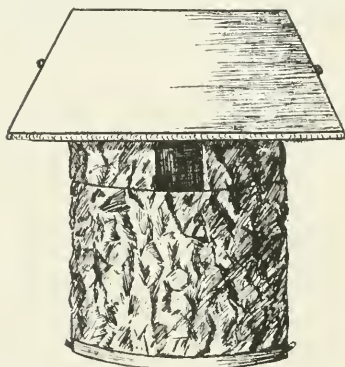
Sparrow Proof Houses

Mr. D. R. Geery, of Greenwich, Conn., sends us descriptions of the two bird-houses here figured. When designed for Bluebirds, they should be suspended from



Made of rough boards. Size, 6 inches high, $5\frac{1}{2}$ inches square at the bottom, $3\frac{1}{2}$ inches square at the top.

a limb ten or twelve feet from the ground, in such a manner as to allow them to swing slightly. Mr. Geery writes: "It may happen that the Sparrows will go to these houses and even commence to build, but, as soon as they find that they swing and are not firm, they will abandon them



Made from a bark-covered log, 8 inches long and 8 inches in diameter, a hole 5 inches in diameter being bored from end to end, leaving an outer wall $1\frac{1}{2}$ inches thick.

entirely. Wren boxes should be stationary, with an opening not much larger than a twenty-five-cent piece, and placed so as to be well shaded most of the day."

A Musical Woodpecker

In the pursuit of my profession I had occasion for some time to travel over a certain road, along which is a telephone line, the glass insulators of which are placed on short pieces of hard wood which are nailed directly to the post.

Probably half a dozen times, when on this road, I saw a male Downy Woodpecker perched directly beneath the hard wood block, pecking at it in a manner to make the wire ring, then pausing and evidently listening to the music it had produced.

When the vibration ceased the performance was repeated and continued at intervals until I was obliged to drive by and frighten the bird away.—DR. D. L. BURNETT, *South Royallton, Va.*

An Ornithologist at San Juan

An English newspaper correspondent, who called at the American Museum of Natural History to identify certain birds which he had seen in Cuba, gave an interesting illustration of how, under the most adverse circumstances, an enthusiastic naturalist may exercise his powers of observation. He said, "I noticed at San Juan a bird which seemed to be much alarmed by the firing. He hopped from the bushes to the lower branches of trees, and then, limb by limb, reached the tree tops," and continued with a readily identifiable description of the singular Cuban Cuckoo, locally known as *Arriero* (*Saurorthera merlini*).

There is one bird in Cuba, the Turkey Buzzard or Vulture, of which many of our soldiers probably retain a too vivid recollection, but how many of the men who were at San Juan can recall any other bird observed during the day of battle?

Book News and Reviews

SKETCH BOOK OF BRITISH BIRDS. By R. BOWDLER SHARPE, L. L. D., F. L. S. With Colored Illustrations by A. F. and C. LYDON, London: Society for Promoting Christian Knowledge, New York, E. & J. B. Young & Co. 4to. Pages xx + 255. Numerous colored illustrations. Price, \$6.

Although more books have been written about British birds than on the birds of any other region, and although Dr. Sharpe has written more bird books than any other living ornithologist, this we believe is the first treatise he has produced on the birds of his native land. He explains that the text is only a "running commentary" on the pictures, but claims that his "Systematic Index" is "the most complete record of the birds in the 'British List' yet published." It enumerates 445 species of birds which, according to Dr. Sharpe, have been recorded from Great Britain. In his 'Introduction' he classifies these according to the manner of their occurrence, as follows: Species which have probably escaped from confinement, 14; Indigenous species, 138; Visitors from the South—regular, 70, occasional or accidental, 69; Visitors from the East—regular, 5, accidental or occasional, 38; Visitors from the North—regular, 35, occasional or accidental, 29; Visitors from the West—regular 1, occasional, 43. The latter are all American species, and the number recorded indicates how much more frequently our birds are found on the other side of the Atlantic than European birds are observed here.

The illustrations consist of colored vignettes in the text of nearly every species. They are not above criticism, but, on the whole, are excellent and form a far more certain and convenient aid to identification than the most detailed description or elaborate key. In many cases even American species of accidental occurrence are figured, and, in this connection, we are tempted to ask why British authors cannot use for our birds the names by which they are known in

this country? Who would recognize the Rusty Blackbird under the name of the "Rusty Black Hang-Nest," a misnomer in every sense of the word, or our Robin as the "American Thrush," to cite two among numerous examples. F. M. C.

Book News.

It is exceedingly gratifying to find the American Ornithologists' Union, as represented by Mr. Witmer Stone, the Chairman of its Committee on Bird Protection, taking so strong a stand on the question of egg-collecting. In his annual report to the Union (*The Auk*, XVI, January, 1899, p. 61), Mr. Stone says, "Egg-collecting has become a fad which is encouraged and fostered by the dealers until it is one of the most potent causes of the decrease in our birds. The vast majority of egg-collectors contribute nothing to the science of ornithology, and the issuing of licenses promiscuously to this class makes any law for bird protection practically useless.

"Too often boys regard the formation of a *large* collection of eggs or birds as necessarily the first step towards becoming an ornithologist of note; but if those who have already won their spurs will take the trouble to point out to the beginners the lines of work which yield results of real benefit to science, they will be led to see exactly how much collecting and what sort of specimens are really needed for scientific research, and not needlessly duplicate what has already been procured. Further, they will in all probability become known as original contributors to ornithological science, while as mere collectors they would bid fair to remain in obscurity."

Mr. Stone's report is of the utmost interest to all workers for the better protection of our birds. We have not space to notice it further here, but it may be obtained by addressing him at the Academy of Natural Science, Philadelphia, Pa., and enclosing six cents in stamps.

Two ornithological organizations established, in January, magazines for the publications of their proceedings and papers relating to the avifauna of their respective states. The first, the 'Journal of the Maine Ornithological Society,' an octavo quarterly, is edited by C. H. Morrill, at Pittsfield, Maine; the publisher and business manager being O. W. Knight, of Bangor, Maine. The second, the 'Bulletin of the Cooper Ornithological Club,' is edited by Chester Barlow, of Santa Clara, California, with the assistance of Henry Reed Taylor and Howard Robertson. The business managers are Donald Cohen, of Alameda, and A. I. McCormick, of Los Angeles, California. Both journals are the outgrowth of a demand on the part of the societies they represent for an official organ, and they will undoubtedly exert a stimulating influence on the study of birds in the states in which they are published.

WE have also to acknowledge the receipt of the initial number of a third new periodical, 'Nature Study in Schools,' conducted by the well-known naturalist, C. J. Maynard, at West Newton, Mass. It is an illustrated monthly of 26 pages, containing papers interesting alike to teachers and students, and should prove very helpful in its chosen field.

HOUGHTON, MIFFLIN & COMPANY have in press a bird-book for children by Mrs. Olive Thorne Miller, to be entitled 'The First Book of Birds.' As its name indicates, it will aim to introduce its readers to the study of birds by taking them from the nest through all the ordinary phases of a bird's existence, and including chapters on structure, economics, directions for study, etc. The book will be illustrated, and its author's experience as a student and teacher of birds is an assurance that it will be a valuable addition to ornithological literature.

FEW nature books not designed to assist in identification of species have met

with the sale that has been accorded Ernest Seton Thompson's 'Wild Animals I Have Known' (Charles Scribner's Sons). Published late in October, it went rapidly through several editions, and by January 1, or little more than two months after its appearance, 7,000 copies had been disposed of.

The reason for this phenomenal success is not hard to find; it appears on every page of the book, the text, illustrations, and make-up of which are equally pleasing.

Mr. Thompson goes a step further than most students of animals in nature. He does not present us with the biography of the species, but with its personal history, and his minute knowledge of and close sympathy with his subjects leads to his writing a singular charm.

JOSEPHINE A. CLARK, of 1322 Twelfth street, N. W., Washington, D. C., publishes a useful 'Bird Tablet for Field Use.' It is abridged from the 'Outline for Field Observations' in Miss Merriam's 'Birds of Village and Field,' and may be obtained from the publisher for the sum of twenty-five cents.

MR. C. A. BABCOCK, well-known as the originator of Bird-Day, has in manuscript a book entitled 'Bird-Day and How to Prepare for It,' which will undoubtedly be of much assistance to teachers, and add greatly to the value of Bird-Day observances.

THE following books and papers relating to birds have been received and will be reviewed in future numbers: The Cambridge Natural History, Vol. IX, Birds, by A. H. Evans (The Macmillan Co.); The Birds of Ontario in Relation to Agriculture, by Charles W. Nash; The Winter Food of the Chickadee, The Feeding Habits of the Chipping Sparrow, by Clarence M. Weed; A Preliminary List of the Birds of Belknap and Merrimack counties, New Hampshire, with notes, by Ned Dearborn; Check List of British Columbia Birds, by John Fannin.

Bird-Lore

A Bi-monthly Magazine

Devoted to the Study and Protection of Birds

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

Published by THE MACMILLAN COMPANY

Vol. 1 APRIL, 1899 No. 2

SUBSCRIPTION RATES.

Price in the United States, Canada, and Mexico, twenty cents a number, one dollar a year, postage paid.

Subscriptions may be sent to the Publishers, at 66 Fifth avenue, New York City, or to the Editor, at Englewood, New Jersey.

Price in all countries in the International Postal Union, twenty-five cents a number, one dollar and a quarter a year, postage paid. Foreign agents, MACMILLAN AND COMPANY, LTD., London.

Manuscripts for publication, books, etc., for review, should be sent to the Editor at Englewood, New Jersey.

Advertisements should be sent to the Publishers at 66 Fifth avenue, New York City.

COPYRIGHTED, 1899, BY FRANK M. CHAPMAN.

THE establishment of BIRD-LORE has brought its editor in touch with many previously unknown friends, who, with the utmost kindness, have expressed their approval of the new publication and predicted for it a successful career. To thank all our correspondents individually has been out of the question, and we take this means, therefore, to assure them of our appreciation of their good wishes.

Doubtless they will be interested to know that within two weeks after the publication of BIRD-LORE, the publishers had disposed of more copies than it was supposed they would sell in two months, while the demand for specimen copies was so large, that at the end of the same period our edition of 6,000 was nearly exhausted and we were obliged to issue a notice to the effect that the remaining copies would be delivered only to subscribers.

THE Lacey-Hoar Bird Bill has met with a greatly to be regretted fate. With earnest advocates of bird protection in both the House and Senate, and with sufficient support to ensure the passage of any desirable measure, the prospects of secur-

ing needed legislation seemed to be excellent. Doubtless both Congressman Lacey's and Senator Hoar's bills would have passed if they had been presented separately, but making the latter an amendment to the former, created a series of contradictions that apparently could not be adjusted in conference, and, as a result, measures the intent of which the majority of both houses evidently favored, failed to become laws.

However, the terms of neither Mr. Hoar nor Mr. Lacey have expired, and it is to be hoped that before the next Congress convenes they will have prepared a bill in which their interests in birds will be harmoniously presented.

ONE of the most dangerous enemies threatening our birds to-day is the man who, under the mask of 'science,' collects birds and their eggs in wholly unwarranted numbers. He is dangerous not alone because of the actual destruction of life he causes, but because his excesses have brought into disrepute the work of the collector who, animated by the spirit of true science, and appreciating the value of life, takes only those specimens which he needs to assist him in his studies.

For this reason we feel it to be our duty to publicly protest against such wholly inexcusable nest-robbing as Mr. L. W. Brownell, of Nyack, N. Y., confesses himself to be guilty of in the January issue of 'The Osprey.' In describing a visit to Pelican Island, Florida, he states that in "about an hour he had collected all the eggs he could conveniently handle, about 125 sets."

This is an outrageous piece of bird-slaughter. It is especially to be deplored because Brown Pelican quills and back feathers are fast becoming fashionable, and, unless the species is protected, Florida will speedily lose one of its most characteristic and interesting birds. But how can we expect women, unfamiliar with the bird in nature, to aid in its protection, when people who have seen it in its haunts, and know how much it adds to Florida's coast scenery, ruthlessly destroy 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 (President of the Audubon Society of the State of Connecticut), Fairfield, Conn., to whom all communications relating to the work of the Audubon and other Bird Protective Societies should be addressed.

DIRECTORY OF STATE AUDUBON SOCIETIES

With names and addresses of their Secretaries.

New Hampshire.....	MRS. F. W. BATCHELDER, Manchester.
Massachusetts.....	MISS HARRIET E. RICHARDS, care Boston Society of Natural History, Boston.
Rhode Island.....	MRS. H. T. GRANT, Jr., 187 Bowen street, Providence.
Connecticut.....	MRS. HENRY S. GLOVER, Fairfield.
New York.....	MISS EMMA H. LOCKWOOD, 243 West Seventy-fifth street, New York City.
New Jersey.....	MISS MARY A. MELLICK, Plainfield.
Pennsylvania.....	MRS. EDWARD ROBINS, 114 South Twenty-first street, Philadelphia.
District of Columbia.....	MRS. JOHN DEWHURST PATTEN, 3033 P street, Washington.
Wheeling, W. Va. (branch of Penn. Society).....	ELIZABETH I. CUMMINS, 1314 Chapline street, Wheeling.
Ohio.....	MISS CLARA RUSSELL, 903 Paradrome street, Cincinnati.
Indiana.....	AMOS W. BUTLER, State House, Indianapolis.
Illinois.....	MISS MARY DRUMMOND, Wheaton.
Iowa.....	MISS NELLIE S. BOARD, Keokuk.
Wisconsin.....	MRS. GEORGE W. PECKHAM, 646 Marshall street, Milwaukee.
Minnesota.....	MRS. J. P. ELMER, 314 West Third street, St. Paul.

The Conducting of Audubon Societies

It is one thing to organize a society or club and quite another to set it upon a permanent footing and keep it in step with the constant requirements of progression. At a time when a great majority look askance at the startling array of societies that they are asked to 'join,' it behooves all Bird Protective bodies to conduct themselves with extreme conservatism, that they may not bear the stigma of being called emotional 'fads,' but really appeal to those whom they seek to interest.

Many men (and women also) have many minds, and a form of appeal that will attract one will repel another. It is upon the tactful management of these appeals and the bringing of the subject vitally home to different classes and ages, that the life of the Audubon Societies depends.

Leaflets have their influence with those who already care enough to take the trouble to read them. Special exercises in schools have a potent influence for good. But the best method of spreading the gospel of humanity, is that by which it was first spread 1900 centuries ago, by personal contact and the power of the

human voice. A few spoken words are worth a score of printed ones. A compelling personality is worth a well of ink in this Bird Crusade of 1899. Let the heads of societies come in contact with the members as much as possible, and gather them in local circles. Let those who are able to speak about birds do so, and let those who lack the gift of words read aloud from the works of others.

Whenever possible, urge local secretaries to hold bird classes during spring and summer in their respective towns. If no one person knows enough to teach the others let them club together, buy a few books, and, going out of doors, work out the problems of identification as best they may, until every little village has a nature study class working its way, Chautauqua-Circle fashion. Remember one point, please. No society can succeed that is content to count the quantity rather than quality of its members. One hundred intelligent members who know how to spread the *why* and *how* of the crusade are worth 10,000 who have merely 'joined' because some one they were proud of knowing asked them to and it was easier to say 'yes' than 'no,' especially as

the *saying* was all it cost. Also, no society succeeds that *bores* people into joining it. Remember that no matter how near one's own heart a project may be, we have no right to *force* it upon others. We have no right to take people by the throat, so to speak, to make them pause and listen, but setting a high standard, holding out a helping hand and making the way attractive to those who wish to reach it is a different thing, and is the only sane policy under which Audubon Societies can be conducted. One word to you who wish to see the societies flourish, who love birds, but are shy and retiring, and do not care to commit yourselves to joining anything. You may safely join the cause in *spirit* by sending a nice little check to the treasurer of your local state society. Piers Plowman discovered long ago that he couldn't "spede" far without money, neither can the Audubon Societies.—M. O. W.

A Letter from Governor Roosevelt

At the annual meeting of the New York State Audubon Society, held in the American Museum of Natural History on March 23, 1899, a letter was read from Governor Roosevelt, which is of such interest and importance that we print it in advance of a report of the meeting, which will appear in a future issue.

Governor Roosevelt regretted his inability to be present, and addressed the following letter to Mr. Frank M. Chapman, Chairman of the Executive Committee:

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 sea shore 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.

Reports of Societies

PENNSYLVANIA SOCIETY

The Audubon Society of Pennsylvania was organized in October, 1896, and was the first society to follow the admirable example set by Massachusetts. During the first year 2,200 members were enrolled and nearly 30,000 circulars distributed. The first annual report was sent out in November, 1897, and it mentions a 'Hat Show,' and a course of lectures to be given in Philadelphia during the spring. Both of these were carried out with marked success, the 'Hat Show' attracting much attention to the work of the society, and

the lectures adding materially to its income, as there are no dues of any kind connected with membership. The second annual report appeared in November, 1898, and announces an increase of 1,100 members during the year. It referred to the fact that as a direct result of the 'Hat Show' several of the best milliners had established special Audubon departments. Lectures were given in many parts of the state with most satisfactory results, and finally, the coöperation of school teachers was solicited to observe May 5, 1899, as Bird-Day. A course of five lectures, by Mr. Stone, will be given this year at the Acorn Club, Philadelphia, beginning March 16. A number of new slides have been bought by the society to illustrate these lectures, and the course promises to be more interesting than ever. Since the second report was issued seven new local secretaries have been secured, making 42 in all. It is hoped that this number will be doubled during the coming year, for as the membership, which is now nearly 3,800, continues to increase, the need of workers throughout the state becomes more important every day.

JULIA STOCKTON ROBINS, *Sec'y.*

INDIANA SOCIETY.

In 1889 the Indiana Academy of Science appointed a committee, of which I was chairman, to secure the passage of a satisfactory law for bird protection. The committee accomplished nothing. It was continued, and in 1891 secured the enactment of the enclosed law. The Academy of Science has, through its efforts in the way of advancing science work in the public schools of the state, encouraged and taught bird protection. In this it has had, since 1890, the coöperation of the Indiana Horticultural Society.

In 1897 at different times several bodies were interested in the movement in favor of bird protection. These appointed committees. These committees united in a call for a meeting to be held at Indianapolis. A programme was prepared, and the meeting held in the State House

April 26, 1898. I send you a copy of the call and programme; also of the constitution of the Indiana Audubon Society. The Governor, and Superintendent of Public Instruction have both been much interested, and as a consequence Bird Day and Arbor Day were celebrated October 28, 1898. The "Outline of Township Institute Work" has gone into the hands of every teacher and school officer in the state. . . . You will see that the work we are doing is practical, even though it is not so much as some States are accomplishing. I have not the enrollment or statement of publications issued, but counting the issue of the State Department of Public Instruction, 20,000 copies of different articles, at least, have been distributed.

AMOS W. BUTLER, *Sec'y.*

ILLINOIS SOCIETY.

The past year has shown a very marked improvement as the results of bird protection and the general work of our Illinois Audubon Society. While the fashion for decorating hats with feathers still continues, yet there is a very noticeable decrease in the display of aigrettes and the feathers of wild birds. I have visited the establishments of several of our Chicago wholesale milliners and find that the larger portion of their stock, this fall, is made up of the feathers of the domestic fowl and game birds. Our Audubon Society has had two public meetings this year, which were well attended, and the interest in its work has rather increased than abated. Our membership has increased to 3,426. We have liberally distributed leaflets, including 500 of our circulars, stating the purpose of the society, to the editors of local newspapers in the state, with request that they aid the society by publishing same and calling attention to it editorially.

On February 7, 1898, an Interstate Convention was held in Chicago, represented by the game and fish wardens, and delegates appointed by the legislatures of the six states which responded to the call. At

the request of Mr. Witmer Stone, I presented at this convention the text of a new law for the protection of birds and their nests and eggs, as drafted by our committee on Bird Protection. The convention agreed to submit the proposed law to each of their respective legislatures.

Great credit is due to the efficient work which has been done in our state by Warden H. W. Loveday and his deputies. Since the first of the year over one hundred prosecutions and convictions have been made, for the wanton killing and trapping of song and insectivorous birds by men and boys largely Italians and Bohemians. In 1897 there were 580 convictions in the state for the illegal killing and transportation of game birds. This year the game has been so carefully watched and such prompt action taken of reported cases of violation, that the poachers and market hunters have been less bold, and the number of arrests and seizures of game have been reduced over one-half.

On April 9, 1898, as a result of the efforts of County Superintendent of Schools Mr. Orville T. Bright, a meeting was held in Chicago in the interest of the school teachers of Cook county. Over three hundred were present, and the meeting was devoted exclusively to birds, and addresses given by several members of the Audubon Society. A "Finding List" of sixty species of birds, compiled by Mr. Frank E. Sanford, Superintendent of the La Grange, Ill., Schools, was distributed. This is a most effective method to inspire the teachers and in turn impart their love for birds to the scholars.

RUTHVEN DEANE, *President*.

IOWA SOCIETY.

Under the auspices of the Keokuk Woman's Club, the Audubon Society of Iowa was organized April 5, 1898.

The first work taken up was the establishment of Bird Day in the public schools.

The second meeting was held in Rand

Park. Short talks were made by Hazen I. Sanger, John Huiskamp, Rabbi Faber, Doctor Ehinger, and a paper was read by Miss Read.

We have bought and distributed through the schools, from kindergarten up, bird pictures and bird literature.

One of our men milliners asked to become a member.

On August 6 the officers of the society met and adopted articles of incorporation, this being the first Audubon Society to be incorporated under the laws of Iowa. The laws of Iowa give fair protection to the birds; our work is in creating the right sentiment.

NELLIE S. BOARD, *Sec'y*.

MINNESOTA SOCIETY

Mr. John W. Taylor, President of the Minnesota Audubon Society, reports the passage of a law establishing Arbor and Bird Day in Minnesota, and writes: "It is, as you can well imagine, a source of great gratification to the lover of birds in the state, and especially to the Audubon Societies. Through this law we can do more towards bird protection than we could accomplish in many years' labor without it. It brings the subject before the teachers and children, and as you educate the child so you mould the man. We have now in this state 58 branch societies, besides many school organizations and children's bird clubs. The number of members I am not able to give, as I have not all the reports in. We have sent out considerable literature, and used the press largely to interest our people. We feel that we are doing wonders for the first active year we have had, and congratulate ourselves that the hardest work is done. We hope by April 1st to have a branch in every county in Minnesota."

REPORTS from the New Hampshire and Wisconsin Societies and a notice of the American Society of Bird Restorers are necessarily postponed until June.

NATURE STUDY FOR GRAMMAR GRADES

A Manual for the Guidance of Pupils below
the High School in the Study of Nature

BY

WILBUR S. JACKMAN, A.B.

Dep't of Natural Science, Chicago Normal School

Author of "Nature Study for the Common Schools," "Nature Study and Related Subjects,"
"Nature Study Record," "Field Work in Nature Study," etc.

REVISED EDITION

In preparing this Manual, it has been the author's aim to propose, within the comprehension of grammar school pupils, a few of the problems which arise in a thoughtful study of nature, and to offer suggestions designed to lead to their solution.

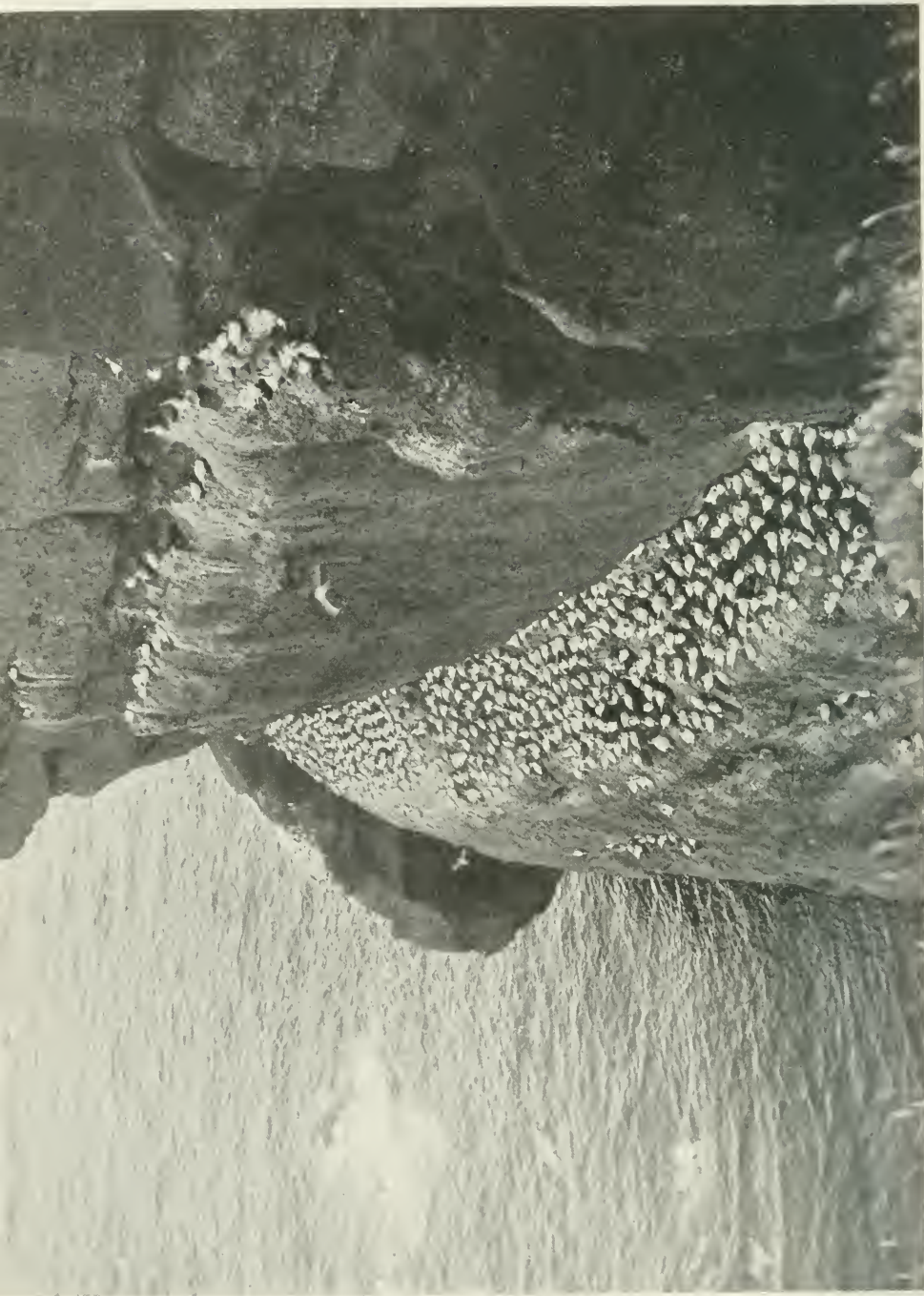
That pupils need some rational and definite directions in nature study, all are generally agreed. But to prepare the outlines and suggestive directions necessary, and to place these within the reach of each pupil, is more than any ordinary teacher has time to do, even granting that she is fully prepared for such work. The utter futility of depending upon oral suggestions during the class hour, when the pupils are supposed to be doing individual work, is easily apparent on a moment's reflection. With a manual of directions in hand, each pupil may be made strictly responsible for a certain amount of work, either in the field or in the laboratory. This removes all occasion for that interruption in his work, which is, otherwise, due to the pupil's attempt to *think* and at the same time *hear*, what the teacher says.

RECENT PUBLICATIONS ON NATURE STUDY

- | | |
|---|--|
| Bailey's First Lessons With Plants . . . \$.40 net
"Extremely original and unusually practical." | Wilson's Nature Study in Elementary Schools.
FIRST NATURE READER 35 cents
SECOND NATURE READER 35 cents
TEACHER'S MANUAL 90 cents |
| Ingersoll's Wild Neighbors \$1.50
"Instructive as well as delightful."— <i>Popular Science Monthly</i> . | Wright's Citizen Bird \$1.50
An interesting story, giving to the children much accurate information about American birds.
"Most delightful book on the subject yet printed in the United States. I wish every boy and girl could read it."—J. M. GREENWOOD, Sup't Kansas City, Mo. |
| Lange's Hand-Book of Nature Study \$1
"The style of the book is fresh and inspiring." | Wright's Four-Footed Americans \$1.50
Four-Footed American Mammals treated in story form in the manner of <i>Citizen Bird</i> . |
| Murché's Science Readers.
Vol. I. 25 cents. Vol. IV. 40 cents net.
Vol. II. 25 cents. Vol. V. 50 cents net.
Vol. III. 40 cents. Vol. VI. 50 cents net. | Wright's Birdcraft \$2.50 net |
| Weed's Life Histories of American Insects . . \$1.50
"An unusually attractive book."— <i>Dial</i> . | |

PUBLISHED BY

THE MACMILLAN COMPANY, New York



GANNETS ON BONAVENTURE ISLAND
Photographed from nature by Frank M. Chapman

Bird = Lore

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

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. 1

JUNE, 1899

No. 3

Gannets on Bonaventure

BY FRANK M. CHAPMAN

(See Frontispiece)



ANNETS (*Sula bassana*) are known to nest in only three places in North America—Perroquet Island, the Bird Rocks, and Bonaventure Island, all in the Gulf of St. Lawrence. By far the largest colony is found on the last named island, where, on the ledges of the red sandstone cliffs, some three hundred feet in height, they are practically secure from molestation. Bonaventure Island itself, however, is the most accessible of the three localities mentioned, and may be easily reached in a small fishing boat from the neighboring village of Percé, where the famous Percé Rock, with its colony of Herring Gulls and Double-crested Cormorants, makes the region particularly interesting to the ornithologist.

The Gannet cliffs are on the east side of Bonaventure, and are exposed to the full force of the sea. To visit them satisfactorily, therefore, one should select a calm day, when one may closely approach the cliffs, and view with both safety and comfort the long, white rows, containing thousands of birds nesting on the shelves and ledges on the face of the cliff; a remarkable spectacle!

The unusually turbulent sea which prevailed during my visit to these cliffs, on July 11, 1898, prevented me from securing satisfactory pictures from a boat, but, landing on the west side of Bonaventure, I crossed the island (here about one and a half miles in width), and reached a position on the crest of the cliffs, from which the accompanying picture was made. About four hundred Gannets are shown nesting on this single ledge—one of many quite as densely populated. Preparations were made to secure a picture of these birds on the wing, but my best efforts to startle them into flight did not succeed in making a single bird leave its nest!

Clark's Crows and Oregon Jays on Mount Hood

BY FLORENCE A. MERRIAM

(Concluded from page 48)



CLARK'S CROW AND OREGON JAY
Photographed from nature by Florence A. Merriam

ALTHOUGH the Nutcrackers and Jays were masters of the feast, they did not altogether monopolize it. Ground squirrels with golden brown heads and striped backs would look out at me from the rocks, and pretty little striped-nosed chipmunks would pick up choice morsels and climb nimbly back along the cliff with them. Juncos often dropped in, pecked indifferently at the crumbs, slipped off the tin cans they tried to perch on, and flew off. Two Lewis' Woodpeckers stopped one day and, flying down, clung awkwardly to the side of the cliff, as if vaguely wanting to join in the proceedings, but not knowing how, finally left. A single Steller's Jay hung around the outskirts in the same way, the first day I was there. He hopped about, looked this way and that, and pecked at the food perfunctorily, as if it was new to his palate and not quite to his mind, acting altogether as if he realized that something was going on he ought to be enjoying, though he really didn't see just where the fun came in. Unlike the Woodpeckers, however, he was determined to improve his opportunities, and cultivated his appetite so successfully that on the last day when I visited the dining-room he and a comrade were working away, apparently enjoying the viands as much as their neighbors.

But the Crows and Oregon Jays were the regular habitués of the place. When resting from his labors a solitary Crow would often perch on the tip of a bare spar on the crest of the cliff, apparently quite satisfied with his own society, but I never saw a Jay there, and one whom I did see separated from his band for a moment fairly made the welkin ring with shouts for his clan. Several Clark's Crows were often at the table with the Jays, but while I never saw a Crow disturb a Jay, a Crow would often fly with animation at a newcoming fellow Crow. This was a surprise to me, for on Mt. Shasta I had seen the Nutcrackers hunting in bands quite as the Jays did here. But on the wide lava slopes of Shasta there were, doubtless, grass-

hoppers enough for all the world, while here the feast was restricted to the foot of one cliff on the mountain—quite a different matter. When I spoke to Mrs. Langille about this difference in disposition, she acquiesced as if it were an old story to her, unhesitatingly denominating the Jays 'generous fellows,' and the Crows 'greedy' ones.

One Crow made a special exhibition of egoistic tendencies. He was engaged in hurriedly carrying off future breakfasts for himself when a party of brother Crows appeared. He had been working with absorption, flying back and forth to the table with eager haste, being gone less than half a minute at a time, but on the arrival of his friends dropped his work and devoted himself to driving them from the field. Not content with keeping them from the table, he flew at them with a strange note of ominous warning when they sat quietly in the tree-tops. It seemed as if he were nervous lest they discover what he had been storing among the branches. When he had fairly routed the enemy he apparently acted on his fear of discovery, for, instead of placing his supplies near at hand as before, he flew out of sight with them. As before, he worked with nervous haste. As I looked down on the tree-tops from above it was impossible to see where he put all the food, but several times when he flew up in sight he seemed to be sticking small bits between the needles of the pines. As the bunches of needles are compact and stiff in this white-barked pine (*Pinus albicaulis*), this might be a safe temporary cache, but the winter gales that make it necessary to hold down the Inn with huge cables would presumably leave little biscuit between the needles of a pine.

The question is, do these birds—and others which hoard—really use their stores? The testimony of all who are in the field in winter is needed to clear up the matter. The first point to be determined is whether the individual birds winter where they store. The Nutcrackers, Mr. Langille informed me, do remain at the high altitudes all the year. As he said, it is stormy indeed when they cannot be seen sailing across the cañons or perched on the topmost branches of the trees, screaming and calling in their harsh way, always restless and seeming to resent any intrusion of man, beast,



OREGON JAYS

Photographed from nature by Florence A. Merriam

or fowl. On the other hand, he said that the Jays seldom remain at the high altitudes during the winter months, usually descending to lower elevations, where they flit about in flocks of from six to twenty, sounding their plaintive varied notes and whistles at all times.

Nevertheless, the storing of the Crows at this altitude was certainly much less systematic than that of the Jays. The Jays' movements were easy to follow, for they were concerted and regular. The Inn was on a ridge between two cañons, and commanded the birds' pathway. A band would come up from under the cliff at the top of the western cañon, cross over the ridge, and drop down into the eastern cañon, where they would fly over the tops of the firs



CLARK'S CROW

Photographed from nature by Walter K. Fisher

till they disappeared from sight. They would be gone some little time, and then return empty-handed to repeat the performance.

The Jays talked a good deal in going back and forth, and their notes were pleasantly varied. One call was remarkably like the chirp of a Robin. Another of the commonest was a weak and rather complaining cry, repeated several times; and a sharply contrasting one was a pure, clear whistle of one note followed by a three-syllabled call, something like *ka-wé-ah*. The regular rallying cry was still different, a loud and striking two-syllabled *ka-whéé*. The notes of Clark's Crow often suggested the rattling of the Red-headed Woodpecker. The bird had a variety of *kerring*, throaty notes, and when disturbed, as at the unexpected sight of me at its dining-room, gave a loud, warning *quarr*. Besides these Woodpecker-like calls, it had a squawking cry similar to that of Steller's Jay.

The voices of the birds were often heard from the house as they got water from the hydrant in front of the Inn, the Jays frequently stopping on the way back from their cañon storehouse. Sometimes

three Jays would suddenly appear overhead, drop noiselessly to the pool under the hydrant, and squatting close together fill their bills and then raise their heads to swallow. Though the Jays usually went to the pool for water, they would sometimes light on the hydrant and, leaning over-drink from the faucet, which Mrs. Langille always left dripping for their benefit. The Clark's Crows, so far as I noticed, always drank right from the faucet.

It was hard to get photographs of the birds at the hydrant, as they stopped only in passing, but as it was impossible to take them under the cliff on account of the poor light, I determined to bait them. Finding a number of the Nutcrackers in front of the kitchen window, I asked the Chinaman for some meat for them, holding up my kodak to explain that I wanted to take the birds' pictures. To my surprise, the man promptly and decidedly shook his head! I didn't know what to make of such apparent rudeness at first, but it finally dawned on me that he could not understand English and, not being an ornithologist, from past experience with tourist cameras concluded that I wanted *his* picture! Accordingly, nothing daunted, I appealed to Mrs. Langille, and when she gave me a plate of suet, returned to take the Crows. They flew at my approach, but quickly settled back and fairly fell on the meat I put in the road for them. I got a snap of one with a big mouthful. After taking all the Nutcrackers I wanted, I went back to the hydrant to wait for the Jays, but the Crows followed and one fellow fairly gorged himself on the fat. He gulped it down so fast I had to drive him off in order to have either meat or films left for the Jays. It was hard to persuade him that I wanted him to leave. He had had no experience of such inhospitality. Mild shooing did no good. I actually had to throw small stones at him before he would take the hint! When he finally started to go, I got his picture as he turned and looked regretfully over his shoulder at the Jay he was leaving in possession of the field.

The Jays were even more fearless than the Crows. Several of them would often be on the ground at once, but they ate so fast and flew back and forth so rapidly that it was hard to focus on them quickly enough to get their most interesting poses. I put a



CLARK'S CROW

Photographed from nature by Walter K. Fisher

brown paper behind or under the pan for a lighter background, and at first the birds hopped nervously when it moved, but they soon got used to it, and ate on it and on the pan, as it happened. And how they did stuff! They were so absorbed that, although I sat within four feet of the pan, they sometimes came too near for me to focus. They paid so little heed to my presence I have no doubt they would have eaten from my hand had I not been engaged in keeping them at a proper distance. When the raw meat was gone Mrs. Langille gave me a supply of cooked fat, and it was astonishing to see how much of the greasy stuff they could swallow. I caught one just as he was about to fly off with a billful of it. The fat seemed to make them thirsty; they had to go to the hydrant to wash it down with cold water.

Meat Hawk, the name the mountaineers have for them; is certainly appropriate. They are on the lookout for meat wherever it is to be found, be it kitchen door or forest. Their appetite for game is truly remarkable. Mr. Langille told me he might go through the woods all day without seeing a single Jay, but if he killed a deer and the smell of blood filled the air, in a few moments the birds would be about, calling and whistling; and, emboldened by the prospect of a feast, they would fly down and perch upon the



CLARK'S CROW

Photographed from nature by Walter K. Fisher

carcass within reach of his hand, sometimes before the deer was entirely skinned.

On Mount Shasta, although the Nutcrackers came about camp, they showed no desire for camp food, and on Hood Mr. Langille informed me that the Crows tamed this year were the first they had ever succeeded in coaxing about. After I left the mountain they became still more familiar, and, I am told, would gather in the trees at daybreak and call until the family went out to feed them.



The Masquerading Chickadee*

BY EDITH M. THOMAS

I came to the woods in the dead of the year,
I saw the wing'd sprite thro' the green-brier peeping :
"Darling of Winter, you've nothing to fear,
Though the branches are bare and the cold earth is
sleeping !"

With a *dec, dec, dec!* the sprite seemed to say,
"I'm friends with the Maytime as well as December,
And I'll meet you here on a fair-weather day :
Here, in the green-brier thicket.—remember !"

I came to the woods in the spring of the year,
And I followed a voice that was most entreating :
Phebe! Phebe! (and yet more near),
Phebe! Phebe! it kept repeating !

I gave up the search, when, not far away,
I saw the wing'd sprite thro' the green-brier peeping,
With a *Phebe! Phebe!* that seemed to say,
"I told you so ! and my promise I'm keeping. "
"You'll know me again, when you meet me here,
Whether you come in December or Maytime :
I've a *dec, dec, dec!* for the Winter's ear,
And a *Phebe! Phebe!* for Spring and Playtime !"

*" MARCH 1, 1856.—I hear several times the fine drawn *Phe-be* note of the Chickadee, which I heard only once during the winter."—" Early Spring in Massachusetts."—THORFAU.

Matins

BY ROSA MEYERS MUMMA

As sable night fades into soft rose tint,
Through leafy aisles slow filters daylight's glint ;
From green tree arch is faintly heard the call
Which summons quickly feathered choir all
To Nature's vast cathedral, where in song
Unite the worshippers, a feathered throng.
What harmonies pour forth from each bird throat !
A morning prayer ascends with each clear note.

Home-Life in a Chimney

BY MARY F. DAY



NEAR BOONTON, N. J., it was my good fortune last summer to have the exceptional opportunity of watching closely the rearing of a family of Chimney Swifts. The nest was built opposite and slightly above an opening in the chimney designed for the insertion of a stovepipe. The opening was about two feet from the floor of a second-story room in the house where I spent the summer.

When discovered, the nest was only partially completed, so it was necessary to exercise care, lest the birds become alarmed and choose a more secluded spot. To guard against disturbance to them, a black cloth was hung over the opening in such a way that it could be carefully and noiselessly lifted during periods of observation. Although the room was used as a bedchamber throughout the summer, the Swifts never seemed to be annoyed by the close proximity of their human neighbors. They were of a trustful disposition, and soon became accustomed to being watched. Occasionally, when I looked in upon them at the beginning of our acquaintance, they would spread their long, beautifully formed wings and lift them gracefully above the back, as if intending to fly, but usually, upon second consideration, would conclude it was unnecessary.

It was the 21st of May when I first peeped in upon the little bracket against the chimney wall that became the stage for the enactment of scenes filled with absorbing interest to me in the weeks that followed. It was not placed in an angle, but against the north side of the flue, beneath a slight projection formed by an accumulation of soot.

In a week one egg was apparent, but there may have been others, for the little builders had been adding one twig after another to the front edge of the nest, so that it had become impossible to see the bottom. Two more days passed, after which it could be seen that there were at least two eggs, and yet the structure continued to be enlarged.

June 5 marked the beginning of incubation. In mid-afternoon of this day I saw the sitting bird had flown, and, going out-of-doors to study birds, my attention was attracted to a Swift flying among the branches of the locust trees near by. This was an unusual sight to me, and, recalling that I had read that Swifts never alight in trees, I watched eagerly to see what it might mean. Soon I saw that the

bird was snatching at little dry twigs. She flew round and round, and presently was gone. Suspecting that it was my little friend, I ran quickly upstairs, and sure enough, there sat my bird upon the nest, with a twig in her mouth, panting as if tired by extra exertion. Resting a moment, she proceeded to apply the salivary glue and adjust the twig, and then settled again to the task of sitting.

After a few days there came a cold storm, and it was believed that the little brooder proved unfaithful to her duties, for late one evening and early the following morning she was seen huddled with others of her kind beneath the nest. Great were my fears that no birds would ever come from these chilled eggs, but time made it clear that the tiny creature knew what she was doing. This was the sole act of parental neglect that was apparent during all the weeks required to rear the family. Under date of June 17, I noted that the eggs were constantly protected. At whatever time of day I looked I saw a sitting bird.

June 24 dawned fair and warm. As was my custom, I called to say "good morning" into the chimney before going down to breakfast, when I found that there was excitement in the little home. A faint peep reached my ear, which caused the mother anxious restlessness each time it was repeated. From half-past eight until ten o'clock that morning I sat at my post of observation, during which time it appeared that two or three more young were hatched, for there was much peeping on the part of the little ones and much fidgeting about by the adults. Two shells, or parts of shells, were tossed from the nest. Occasionally the parents exchanged places, one brooding the infants while the other went out into the air. Even at the tender age that must be reckoned by minutes, these young birds were fed, seemingly, by regurgitation.

During the progress of my study I found that one of the pair, which from manners and appearance I judged to be the female, had lost a tail feather, and this one I affectionately dubbed "Swiftie." She appeared worn out with anxiety added to the confinement of a long period of incubation, and embraced every opportunity to rest, but seasons of sleep were of short duration, for it seemed that the body of the brooding bird was lifted each time a movement was felt beneath. The mate, with his sleek coat, bright eyes and calm demeanor, formed a decided contrast to the ragged, unkempt appearance of the female.

Even four days showed perceptible growth in the swiftlings. They were not allowed to remain uncovered, a wise precaution, for their bodies were perfectly naked. At this age the instinct of cleanliness began to assert itself. The weak, awkward little creatures would

struggle backward from beneath the brooder, up to the edge of the nest and deposit over it that which, remaining within, would have made their home uninhabitable.

From this time forth a third Swift was seen to enter into the care of the nestlings, taking its turn at brooding and feeding. Was this a nurse-maid employed to relieve the overburdened mother, or a kind and helpful friend or neighbor, or the younger and less care-taking of two wives? Who can tell?

It was not until the sixth day after hatching that I knew to a certainty how many young birds there were. Then, to my surprise, I found there were five. They had grown to be very clamorous for food. Two, at most three (later but one), were served at one feeding, and the process was after this manner: "Swiftie" would drop into the chimney and alight below the nest, her throat bulging with the fullness of captured insects. The little ones that were hungry were alert, for all had learned that a rumbling noise in the chimney, followed by a sound of "chitter, chitter, chitter," meant something to eat. After resting a moment, the mother would scramble up over the nest, and, with closed eyes, feel about until she came in contact with an open mouth, whereupon she would place her beak far down the throat, deposit a portion of food, then seek another yawning cavity. No system appeared to be observed in the matter of feeding. The hungriest youngsters made the greatest effort to reach the source of supply.

July 1 feathers began to appear. They grew rapidly, especially those of wings and tail, and in a week the bodies were about covered. With feathers came employment, for they must often be dressed, though from a habit of yawning frequently, common to the family, one might be led to believe that time hung heavily on their claws.

The nestlings were two weeks old before the eyes began to open, and nearly three before they were much used. But when they were fully open, and the feathers had grown out and were fast becoming sooty instead of black, how winning these young birds appeared!

The time had now come to take up exercises preparatory to flying. The young aspirants would stand in the nest and for a time vibrate the wings rapidly, so rapidly that the identity of wing was lost. Two first ventured from home when nineteen days old, clinging to the wall for a short time a few inches from the nest.

One afternoon about this time there came a severe and prolonged shower. The rain beat into the chimney, reaching down to the nest. What now did I see? Besides the five grown-up swiftlings, the three adults, packed in and upon the nest, the rain dripping from

those which were exposed. I mention this incident to give an idea of the adhesiveness of the glue used in the construction of Swifts' nests.

July 20 I made the following note: "Swiftlings no longer make use of the nest, but dispose themselves in various parts of the chimney, sometimes in a cluster, sometimes in twos or threes, and sometimes separately. They take flying exercises up and down the chimney, but I believe have not yet left it." The next morning I was forced to conclude that three had taken flight into the great outside world, for upon looking the chimney over thoroughly with the aid of a small mirror, I could find but two birds.

The chimney was much used by this interesting family until the 24th of August. Early in the morning of that day a large number of Swifts were seen gathering in a flock at a short distance from the house. Ten o'clock that night I searched the chimney with a lighted candle, but found no sign of life, and I believe that the Swifts did not again enter within its walls.

Three Cobb's Island Pictures

BY WILLIAM L. BAILY



BLACK SKIMMER

RIGHT out on the sandy beach, just above high tide, the Black Skimmer risks her set of eggs, and, while apparently unprotected, they are so much the color of the sand and the surrounding shells and seaweed that they would not be noticed unless you were especially looking for them.

The Skimmers are gull-like in form, with long, slender body and long wings, spreading almost three feet. They have a glossy black back, white breast, orange feet, and a most curiously shaped orange bill, which is almost as thin as a knife, the thin edges closing vertically together. This peculiarity has given the bird the name of 'Razor Bill.'

Their graceful and regular flight can hardly be mistaken for that of any other bird. They skim just over the surface of the water, following the contour of the waves, while the lower mandible of their

bill, which is longer than the upper, projects below the surface of the water, and when it comes in contact with a small fish, the latter simply slide up the narrow, inclined plane into the Skimmer's mouth.

Formerly they bred in great numbers along the eastern coast of our Middle and Southern Atlantic states, and only a few years' ago



NEST AND EGGS OF BLACK SKIMMER

were abundant on the New Jersey coast. They have been crowded out, however, by encroaching civilization, and hunted down by the milliners' agents and the egg-collectors. In June, 1898, I found them on Cobb's Island, Virginia, to the number of about two hundred pairs, where, not long ago, they bred in thousands.

As the eggs are entirely exposed, the parents are relieved to some extent from the duty of incubation by the heat of the sun, and as soon as the young hatch they run about like chickens.

After getting two good pictures of the Skimmer and her eggs, I turned my attention to a Gull-billed Tern, and while standing over



GULL-BILLED TERN

her nest, which contained two eggs and one fuzzy young, just hatched. I obtained a rather remarkable picture of the parent bird flying straight at the camera, nicely illustrating what a small sectional area a bird occupies while flying.

The Cardinal at the Hub

BY ELLA GILBERT IVES

With Photographs from nature by Blanche Kendall



THIS range being southern, Cardinal Grosbeak seldom travels through New England; and, to my knowledge, has never established a home and reared a family north of Connecticut until in the instance here recorded. Kentuckians claim him, and with some show of right, since James Lane Allen built his monument in imperishable prose. But, soon or late, all notables come to Boston, and among them may now be registered the "Kentucky Cardinal."

Shy by nature, conspicuous in plumage, he shuns publicity; and, avoiding the main lines of travel, he put up at a quiet country house in a Boston suburb—Brookline.

Here, one October day in 1897, among the migrants stopping at this half-way house, appeared a distinguished guest, clad in red, with a black mask, a light red bill, and a striking crest; with him a bird so like him that they might have been called the two Dromios. After a few days, the double passed on and left our hero the only red-coat in the field. A White-throated Sparrow now arrived from the mountains, and a Damon and Pythias friendship sprang up between the birds. Having decided to winter at the North, they took lodgings in a spruce tree, and came regularly to the table d'hote on the porch. My lord Cardinal, being the more distinguished guest, met with particular favor, and soon became welcome at the homes of the neighborhood. With truly catholic taste, he refused creature comforts from none, but showed preference for his first abode.

It was March 5, 1898, when we kept our first appointment with the Cardinal. A light snow had fallen during the night, and the air was keen, without premonition of spring. It was a day for home-keeping birds, the earth larder being closed. The most delicate tact was required in presenting strangers. A loud, clear summons,—the Cardinal's own whistle echoed by human lips—soon brought a response. Into the syringa bush near the porch flew, with a whir and a sharp *tsip*, a bird. How gorgeous he looked in the snow-laden shrub! For an instant the syringa blossoms loaded the air with fragrance as a dream of summer floated by. Then a call to the porch was met by several sallies and quick retreats, while the wary bird studied the newcomers. Reassuring tones from his gentle hostess, accompanied by the rattle of nuts and seeds, at last prevailed, and the Cardinal flew to the railing and looked us over with keen, inquiring eye. Con-

vinced that no hostilities were intended, he gave a long, trustful look into the face of his benefactress and flew to her feet.

A gray squirrel frisking by stopped at the lunch-counter and seized an 'Educator' cracker.

The novel sensation of an uncaged bird within touch, where one might note the lovely shading of his plumage as one notes a flower, was memorable; but a sweeter surprise was in store. As we left the house, having made obeisance to his eminence the Cardinal, the bird



CARDINAL AND GRAY SQUIRREL

flew into a spruce tree and saluted us with a melodious "Mizpah." Then, as if reading the longing of our hearts, he opened his bright bill, and a song came forth such as never before enraptured the air of a New England March,—a song so copious, so free, so full of heavenly hope, that it seemed as if forever obliterated were the "tragic memories of his race."

As March advanced, several changes in the Cardinal were noted by his ever-watchful friends. He made longer trips abroad, returning tired and hungry. The restlessness of the unsatisfied heart was plainly his. His long, sweet, interpolating whistle, variously ren-

dering "Peace . . . peace . . . peace!" "Three cheers, three cheers," etc., to these sympathetic northern ears became "Louise, Louise, Louise!" Thenceforth he was Louis, the Cardinal, calling for his mate.

On March 26, a kind friend took pity on the lonely bachelor, and a caged bird, "Louise," was introduced to him. In the lovely dove-colored bird, with faint washings of red and the family mask and crest, the Cardinal at once recognized his kind. His joy was unbounded; and the acquaintance progressed rapidly, a mutual understanding being plainly reached during the seventeen days of cage courtship. Louis brought food to Louise, and they had all things in common except liberty.

April 12, in the early morning, the cage was taken out-of-doors and Louise was set free. She was quick to embrace her chance, and flew into the neighboring shrubbery. For six days she reveled in her new-



CARDINAL AND HOUSE SPARROWS

found freedom; Louis, meanwhile, coming and going as of old, and often carrying away seeds from the house to share with his mate.

April 16, he lured her into the house, and after that they came often for food, flying fearlessly in at the window, and delighting their friends with their songs and charming ways. Louis invariably gave the choicest morsels to his mate, and the course of true love seemed to cross the adage; but alas! Death was already adjusting an arrow for that shining mark.

April 25, Louise stayed in the house all day, going out at nightfall. Again the following day she remained indoors, Louis feeding her; but her excellent appetite disarmed suspicion, and it was thought that she had taken refuge from the cold and rain, especially as she spent the night within. The third morning, April 27, she died. An examination of her body revealed three dreadful wounds.

Louis came twittering to the window, but was not let in until a day or two after, when a new bird, "Louisa," had been put in the cage.

When he saw the familiar form, he evidently thought his lost love restored, for he burst into glorious song; but, soon discovering his mistake, he stopped short in his hallelujahs, and walked around the cage inspecting the occupant.

Louisa's admiration for the Cardinal was marked; but for some days he took little notice of her, and his friends began to fear that their second attempt at match-making would prove a failure. April 30, however, some responsive interest was shown, and the next day Louis brought to the cage a brown bug half an inch long, and gave Louisa his first meat-offering.



CARDINAL

The second wooing progressed rapidly, and May 7, when Louisa was set free, the pair flew away together with unrestrained delight. After three days of liberty,

Louisa flew back to the house with her mate, and thenceforth was a frequent visitor.

May 21, Louisa was seen carrying straws, and on June 6 her nest was discovered low down in a dense evergreen thorn (*Crataegus pyracantha*). Four speckled eggs lay in the nest. These were hatched June 9, the parent birds, meantime and afterward, going regularly to market and keeping up social relations with their friends.

In nine days after their exit from the shell, the little Cardinals left the nest and faced life's sterner realities. A black cat was their worst foe, and more than once during their youth Louis flew to his devoted commissary and made known his anxiety. Each time, on following him to the nest, she found the black prowler, or one of his kind, watching for prey. On June 28, the black cat outwitted the allied forces, Señor Cardinal and his friends, and a little one was slain. The other three grew up and enjoyed all the privileges of their parents, flying in at the window and frequenting the bountiful porch.

July 25, Louisa disappeared from the scene, presumably on a southern trip, leaving the Cardinal sole protector, provider and peace-maker for their lively and quarrelsome triplet. A fight is apparently as needful for the development of a young Cardinal as of an English schoolboy, possibly due in both cases to a meat diet.

Over-feeding was but temporary with our birds. On the 8th of August the migratory instinct prevailed over ease, indulgence, friend-

ship, and the Cardinal with his brood left the house where he had been so well entertained, to return no more. No more? Who shall say of any novel that it can have no sequel? Massachusetts may yet become the permanent home of the Kentucky Cardinal, the descendant to the third and fourth generation of Louis and his mate.

A Catbird Study

BY DR. THOS. S. ROBERTS

Director Department of Birds, Natural History Survey of Minnesota.
With Photographs from nature by the Author.

THE subjects of this sketch had located their bark- and root-lined nest of coarse sticks, four feet from the ground, in a little oak bush surrounded by brakes, sunflowers, and hazel. Instead of being, as usual, in the midst of a dense, and, therefore, dark thicket, this nest was quite in the open, shaded by only a few



CATBIRD AND NEST

overhanging, leafy branches of small size. Its exceptionally favorable location and the apparent tameness of the birds suggested an attempt at avian photography, and the undertaking was entered upon at once, a very considerable fund of interest and enthusiasm having to take the place of any special previous experience in this line of work. After clearing away a little of the overhanging and intervening vegetation, the camera was placed with the lens not more than two feet

from the nest, this being necessary in order to secure an image of the desired size with the short focus lens at hand (a B. and L. Zeiss Anastigmat, Series 11 A, $6\frac{1}{2} \times 4\frac{1}{4}$, focal length $5\frac{3}{8}$ inches). Fifty feet of rubber tubing, a large bulb, and a field-glass made it possible to watch developments and carry on operations from a safe distance. But, although the camera was nearly concealed with ferns and leaves, this day's proceedings were not rewarded with much success. The birds proved exasperatingly timid, and returned only after prolonged waits, to disappear instantaneously on the click of the shutter (a B. and L. iris diaphragm shutter). So we left the field, not disheartened but bent upon improving our paraphernalia. A day or two later found the camera again in position, but this time with tripod green-painted



CATBIRD ON NEST

and the whole unsightly top enveloped in a green hood with only a small aperture for the lens. This ruse succeeded fairly well, and during the three or four hours that the light was good on this day, and during a like period on a subsequent day, a number of exposures were made that resulted in an interesting series of negatives, giving good prints and still better lantern slides.

Only one of several time-exposures turned out perfect. It is here presented, not only as the prize picture of some three hundred negatives made during the summer of 1898, but as the sole and only entirely satisfactory outcome of some twelve or fourteen hours' work.

For Teachers and Students

On the Ethics of Caging Birds

BY OLIVE THORNE MILLER



BEFORE saying a few words on this subject, I should like to define my position. With all my heart do I disapprove of caging wild birds. I never had, and never shall have, the liberty of one bird interfered with for my pleasure or study, and if I had the power to prevent it, not one should ever be caged. Especially do I regard it as cruel in the extreme to confine an adult bird, accustomed to freedom and able to take care of himself.

The question of "rights" we will not enter upon here, further than to say that our moral right to capture wild creatures for our own use or pleasure is the same in the case of birds as of other animals—horses, for example.

But birds *are* caged, and we must deal with circumstances as we find them. If a bird-lover should worry and fret himself to death, he could not put an end to their captivity. So it would appear to be the part of wisdom to see if there are not mitigating circumstances, which may comfort, and perhaps, in a slight degree, even reconcile one to their imprisonment.

The case of Canaries is different from that of all others. Hatched in cages, descended from caged ancestry, and accustomed to be cared for by people, they know no other life, and are utterly unfitted for freedom. So far from being a kindness to set one of these birds free, it is absolute cruelty. It is like turning a child, accustomed to a luxurious life, into the streets, to pick up a living for himself.

But a young bird, taken from the nest before he has learned the use of his wings, I believe, can be made perfectly contented and happy in a house—if *he is properly cared for!*

It is unfortunately true that not one in a thousand *is* properly cared for, but we are not considering the shortcomings of people. At this moment we are considering the possibility of making a bird's life happy.

For several years I kept birds in captivity, and closely studied their ways and their characters, and I say, without hesitation, that most birds can be made so contented and happy that they will prefer

their captivity, with its several advantages, to freedom without them. The advantages of captivity to a bird are three: viz., abundant food supply, protection from enemies, ease of life—without labor or concern about weather.

The conditions, therefore, necessary to his happiness are: Never-failing care as to his physical comforts—such as a proper situation of the cage,—neither in the hot sunshine nor in a draught; fresh and perfect food, with variety; plenty of fresh water; suitable and regular bath, etc. And secondly—though perhaps it should be first, as it is most important—treatment as if he were a sentient being, instead of a piece of furniture; talking to him, taking notice of him, making a companion and friend of him. And thirdly, the freedom of a room, at least part of every day.

Under these conditions, as I know from close and sympathetic observation, our little brothers can be made so happy, that, as I said, many of them will not accept their liberty. They choose between freedom, with hard labor and many anxieties, and comfortable captivity, with ease and security, and many decide—as do many of the human family—for the former.

There is another reason why I have become partially tolerant of the caging of birds. What first influenced me was the fact that every individual rescued from the discomforts of a bird store, where they are seldom well cared for and never cherished, is greatly benefited, and I felt that to be a work of charity.


But there is one strong argument in favor of the custom. That is, their great value as a means of educating children. Nothing is more important than the training of our youth in humanity and respect for the rights of others. And in no way can this be so well accomplished as by giving to them the care of pets. By investigation of prisons and reform schools, it has been amply proved that nothing so surely keeps a boy from falling into a criminal life as the care of and kindness to the lower orders. The daily care of a pet bird is a daily lesson in altruism which never fails to bear fruit.

In those precious first years of the child's life, when the mother has the power of instilling lessons that will be a part of him,—the most indelible he will ever receive,—if she takes a little pains to do so she can implant, with the love of creatures dependent upon him, qualities that will go far to make him a true, manly man.

While these considerations do not, perhaps, make it right to deprive a fellow creature of his liberty, they do furnish a little consolation to those who love humanity as well as birds. At the same time I must admit, that of all pitiful sights on earth, that of a neglected captive is one of the most heartrending.

A May Morning

BY FRED. H. KENNARD



THESE is a bird pasture, as I call it, about a half hour's ride from Boston, and thither I went on May 30, 1898, to see if I could find the nest of a White-eyed Vireo that I had often hunted for in years gone by, but never yet succeeded in finding.

This bird pasture, on one side of which runs the road, consists of eight or ten acres of old, wet pasture land on a hillside surrounded on two other sides by fields and an orchard, and immediately above a marsh in which the sedges and grasses grow luxuriantly, and which is bordered by alders, birches and other swamp-loving trees. The pasture itself is very wet in one portion, and has been overgrown with birch, alders, oak and tangles of grapevines, wait-a-bits, poison ivy, etc. In another part it is more open, and is more sparsely covered with red cedars and white pines, while the ground is dotted with wild roses and hard-hack, interspersed with clumps of alders. This combination of hill and marsh, field and orchard, cover and open, as well as evergreen and deciduous growth, makes it an ideal place for birds and their breeding; and one that is hard to duplicate in any locality, combining also woods and civilization as it does, for there are houses and barns in the immediate vicinity. You probably cannot duplicate this pasture, but those of you who love birds, and who can find any spot approximating this in conditions, would do well to appropriate it, metaphorically speaking, as I have this.

But to return to the birds—I thought I would carefully note all those I saw or heard in the course of a short hour I had to spare, and with the following results: As I took down the bars in order to take my bicycle into the pasture, a Baltimore Oriole was singing on top of an elm close by, and I have no doubt that its mate was sitting on the nest that hung pendent from the next tree. A Catbird slunk off into the bushes to the right of me, from a thicket in which she last year raised a brood; and, while chaining my wheel, I heard the glorious notes of a Brown Thrasher singing, a little way off, on the top of a tall white oak. Several Red-eyed Vireos were there too, their steady, rippling song forming a soft accompaniment to the more conspicuous notes of the other feathered songsters. Next, I flushed a Quail, and, while watching its flight, I almost stepped on two more, which got up from the underbrush at my feet.

I started in now on my hunt for the White-eye's nest, and for

some time was so absorbed in that, and in listening for its expected song, that there was no time to make notes of the other birds heard, except that of a Wood Thrush, whose nest contained four eggs, and was saddled on the crotch of a grape-vine, where it crossed through the crotch of an alder.

To make a long story short, I did not find the Vireos, or even hear them, though for several years they had lived here throughout the summer. I finally went out into an open space, lighted a pipe as a mosquito preventive, and, seating myself on the soft side of a boulder, put down the names of the birds whose notes I could hear.

Below me, in the swamp, the most prominent notes were the 'concrees' of the Red-winged Blackbirds, while between them could be heard the songs of several Swamp Sparrows. Close beside me were a Chestnut-sided and a Golden-winged Warbler, both seemingly much disturbed by my presence, while just as near was a Maryland Yellow-throat, an old friend of mine, who did not seem to care whether I was there or not. This same friend is rather a curiosity, for, although his species usually build in or about the marshes or swamps, he always prefers the hillside, and I last year found his nest within forty feet of where I sat, and several hundred feet away from and above the swamp.

A few Cedar Birds were whispering from the tops of a couple of red cedars about fifty yards away, and I could hear a Yellow Warbler on the other side of the open space, where he sang, apparently for the benefit of a near-by barberry bush.

A Wood Pewee was uttering his plaintive note from the orchard immediately back of me; while just back of that, in the field by the top of the hill, could be heard the rollicking notes of a Bobolink and the occasional call of a Meadow Lark. While writing my notes, some kind of a large Hawk, which flew so fast that identification was impossible, but which I guessed to be a Cooper's Hawk, went off rapidly across the marsh, pursued by a pair of vociferous Kingbirds; and, as I watched them, I could see numbers of Chimney Swifts, from the neighboring chimneys, and Barn Swallows, from a barn close by, coursing about above the marsh after the insects that there abound, the Swallows low down and the Swifts above. While watching the Swallows, two Crows came out of the wood on the opposite side of the marsh, and flew, cawing, across and off into the distance; and a little Green Heron, who, like all fishermen, prefers quiet, flew off in another direction.

Down towards the edge of the swamp, in the outlying thicket, a Song Sparrow was singing, while, close by, a magnificent Rose-breasted Grosbeak, which every year builds in the birches which grow

in these thickets, was warbling his incomparable song. At first he had been giving vent to his very unmusical call of alarm, but, becoming used to my presence, and concluding that I meant no harm, he joined in the concert.

Off to one side, among the more scrubby deciduous growth, I could hear, and sometimes see, a Redstart, while the *tse-tse-tse*-ing of the Black-poll Warblers, which were migrating northwards, could be heard intermittently. Two Quails were now calling loudly for Bob-White, or Rob-ert-White, as their fancy dictated, and in the confusing medley I could make out the modest notes of a Black and White Warbler, which had for years nested somewhere in this pasture. Behind me, at the top of the hill, I could also hear the clear, cheery notes of a Field Sparrow, which always builds there.

Being limited as to time, and having already heard twenty-eight kinds of birds in the short space of about twenty minutes, and from one place, I started to depart, but even as I did so I heard the notes of another bird coming across the marsh, that of the Black-billed Cuckoo, and just as I was again taking down the bars to get out into the street, what should I hear, loud, clear and distinct, but the song of that plaguey little White-eyed Vireo, a song seemingly of thanksgiving that I was really going and that he had eluded me so well. I then reluctantly mounted my bicycle, but was forced to get off, to add two more birds to my increasing list; viz., a Cowbird, which was sitting on the fence opposite, and a pair of Yellow-throated Vireos, the female of which had evidently but just left her nest for a lunch, while the male followed twittering and whispering close by, stopping his song until she should have resumed her duties of incubation.

I had now seen thirty-two different species of birds in the short space of about twenty-five minutes' actual time spent in observation, after deducting the time spent in hunting the Vireo's nest, and departed for home well content, even though I knew I had seen only about three-fifths of the varieties of birds that are often to be found in the immediate vicinity.

On a previous occasion, when I had been lucky enough to be able to spend a whole morning in this pasture, I had seen forty-four different species, nineteen of which I had not seen to-day, and which, added to the thirty-two noted above, make a total of fifty-one species. Of these, there were only five that were merely occasional visitors. Of the remainder, I have found direct evidence of the breeding of thirty-two species, while on various accounts I feel sure that fourteen others breed there, although I have never actually found their nests.

For Young Observers

A February Walk (Prize Essay)

BY MILDRED A. ROBINSON

(Aged 14 years)



WE had planned to walk over to the pond to see if the recent thaw had spoiled the skating. As we passed the foot of the hill, the little brook splashed and tumbled down from its icy framework, eddying around the brown goldenrod stalks, and then rushed on at topmost speed across the opposite meadow.

We were standing on the little bridge, watching the ever fascinating current, when an odd bird-note called our attention to a little gray-backed, white-breasted bird who was running up and down a neighboring tree.

All thoughts of skating instantly vanished from our minds; we climbed the fence, and in a moment more were noiselessly following our obstinate little bird, who would keep so high up in the tree-tops that it was almost impossible to see anything but his breast.

Finally, he descended, head downward, along one of the lower branches of the tree, and we saw that it was a White-breasted Nuthatch. Evidently he thought he had stayed quite long enough for examination, so, after a few parting pecks at the rough bark, trying to secure one more hidden insect, he flew off.

We were slowly following the course of the little stream, when suddenly a great rustle of the dead leaves near the water's edge caused us to pause and listen. All was silent, with the exception of a few distant Chickadees, then, with a whirl and a clatter, we saw a bushy tail disappear into the thicket; a moment more and out came a beautiful gray squirrel. Like a flash he was up the tree, jumping from limb to limb, frisking about in the sunshine, then down onto the ground again, and away. His visit was even shorter than that of the Nuthatch, but not less enjoyable.

And now, where were those noisy little Chickadees who had been calling to us from the alder bushes for the last half-hour? It was easy enough to find these confiding little creatures; they were feeding on the ground, and seemed quite unconcerned at our presence, although we approached very near to them. One little fellow seemed

to be asleep; he sat all puffed up on one of the alder branches, but as I came nearer to him I could see that his bright little eye was on me, and at the next step he flew away.

It was now late in the afternoon, and, as we looked toward the west, the last rays of the sun were just tinting the distant hills with a mellow, golden hue; the birds had flown away, leaving the woods silent, so we reluctantly turned our footsteps towards home.



ROBIN ON NEST

Photographed from nature by T. S. Hankinson

Robin Rejoice

BY GARRETT NEWKIRK

Among the first of the spring,
The notes of the Robin ring;
 With flute-like voice,
 He calls "Rejoice,
For I am coming to sing!"

To any one gloomy or sad,
He says, "Be glad! be glad!
 Look on the bright side,
 'Tis aye the right side;
The world is good, not bad."

At daybreak in June we hear
His melody, strong and clear:
 "Cheer up, be merry,
 I've found a cherry:
'Tis a glorious time of the year!"

Notes from Field and Study

Inquisitive Magpies

I was collecting specimens of natural history in the northern part of the state of Washington, a few miles from the Canadian border. At the time the incident which I am about to relate occurred I was stopping at a ranch at the southern end of Okonogon lake.

The owner of the building was cramped for room, so, as it was during the heat of the summer, I spent the nights rolled up in my blankets under a haystack. One morning, as the sun was rising, I was awakened by shadows crossing my face, and opening my eyes saw a flock, possibly a family, of Magpies perched on the stack and ends of poles that had been thrown over it to keep the hay from blowing away. I watched them as they peered inquisitively at me from their perches, until finally one flew to the ground, then another and another, until at last several were gathered about me, but a few feet away. I lay on my side, with my arms under the blankets, and watched their actions. At last one jumped on the blankets at my feet. I could feel him hopping slowly upward. I did not move for fear of frightening him. Finally he reached my shoulder, and, after perching there a few seconds, flew to my cheek. I closed my eyes slowly, fearing he might peck them. After testing my cheek lightly with his bill, he began to get in some uncomfortably heavy blows, so I thought it time to stop him. Without opening my eyes, or moving, I said in a low tone, "Here! Here! That will do!" He hesitated, as if to make sure his ears had not deceived him, and then flew to the stack. Another took his place, after working up in the same manner; he was quietly asked to move on. When the next one hopped on the blankets, I slowly raised my hand under them, making a tempting elevation, of which he was not slow to take advantage. He lighted squarely in the palm of

my hand, which I closed at once, and held him prisoner. With the other hand I caught him by the legs from the outside, whereupon he flopped his wings, cried out with anger, and pecked at my wrist savagely. The remainder of the flock, which, in the meantime, had flown to the haystack, scolded and jabbered away at a great rate.

Evidently they had taken me for a corpse, but I think it was the liveliest one they ever saw.—J. ALDEN LORING, *Ozwego, N. Y.*

Songs of Birds

The songs of birds have attracted a good deal of attention in recent years, and observation seems to confirm the theory that each generation of birds learns the song characteristics of its species by association with its own kind.

This fact was brought quite clearly to my mind several years ago, when in a western town I was taken to a neighbor's to see his birds. Four cages swung in the shelter of a commodious porch. One contained a Red-winged Blackbird, that had been taken from its nest when very young, and brought up by hand. His associates were a Canary, a Blue Jay and an Oriole. The Canary had been purchased at a bird store, and had there learned its song. The Blue Jay and Oriole had been taken from neighboring nests, and had, no doubt, picked up the characteristic notes of their species from the many other members of their kind that inhabited the vicinity, but it was many miles to the nearest swamp or low land where one might find a Red-winged Blackbird. This Red-wing had learned perfectly the notes of his caged companions, and had picked up some notes of other birds in the neighborhood, but not one note of the Red-winged Blackbird did he know.—FRANK E. HORACK, *Iowa City, Ia.*

Book News and Reviews

BIRDS. By A. H. EVANS, M.A. The Cambridge Natural History, Vol. IX. London: Macmillan and Co., Limited. New York: The Macmillan Company. 1899. 8vo, pages xvi + 635. Numerous woodcuts in text. Price, \$3.50.

The author of this compact volume has essayed what he himself recognizes as the "difficult and apparently unattempted task of including in some six hundred pages a short description of the majority of the forms in many of the families, and of the most typical or important of the innumerable species included in the large Passerine order."

The book opens with a "Scheme of the Classification Adopted," based on the system proposed by Gadow, in which the *Archaeopteryx* stands at the bottom of the list, followed by the Ostriches, Rheas, and other struthious birds, while the Finches are placed at the top. An introduction of twenty-two pages treats of feathers, color, the molt, the skeleton, digestive organs, etc., classification, terminology, geographical variations, and migration, the handling of the last two subjects being far from satisfactory.

The remainder of the book is devoted to a consideration of the birds of the world. The matter is selected with excellent judgment and is admirably put together, the text having an originality and freshness not often found in compilations. The author, however, is handicapped by lack of space, and, except in monotypic families, is, as a rule, obliged to generalize to such an extent that the seeker for information concerning certain species will usually find only the characteristic habits of its family given. But if the author has not achieved entire success, he has, perhaps, more nearly approached it than any of his predecessors, and in his work we have for the first time an authoritative handbook of the birds of the world, which is sold at a low enough price to be within the reach of every student.

The illustrations, with the exception of a comparatively few, which were taken from duly credited sources, are by Mr. G. E. Lodge, who, at his best, is, in our opinion, one of the foremost of bird artists.—F. M. C.

THE FEEDING HABIT OF THE CHIPPING SPARROW, AND THE WINTER FOOD OF THE CHICKADEE. By CLARENCE M. WEED, New Hampshire College, Agricultural Experiment Station.

In the first of these interesting papers, Dr. Weed has introduced us directly into the domestic life of a family of Chippies. We have a view, for one day, of all their affairs, both personal and domestic; and to many it must be a wonderful revelation. It is fortunate for the birds that their period of infancy is so short, as otherwise their parents must utterly break down with the task of filling their ever-open mouths. Beginning at about 3:57 in the morning, these devoted parents worked almost without cessation till 7:50 in the evening, bringing food to their four young on an average of twelve times an hour; or once every five minutes.

What would human parents think of such work? The question arises: When do the old birds eat? In the case of a nest of this species watched by the writer on July 11, 1898, feeding of the young ceased at 7:25 in the evening, when both parents flew away. In twenty-five minutes, that is, at 7:50, the female parent (presumably) returned and settled on the nest for the night. At that time it was so dark that all other birds had disappeared. It seems probable that in this last twenty-five minutes the parent birds filled their own stomachs for the night.

The second of these papers is of a more prosaic character, but not the less interesting or useful. We have here a record in detail of the winter food of the Chickadee, showing how largely it consists of those minute insects, or their still more minute

eggs, that injure the trees and baffle the efforts of man for their extermination.

In both papers we are shown the unpoetical but useful side of bird-life. These two confiding little birds have endeared themselves to their human neighbors by their gentle ways and familiar habits; but in these papers Dr. Weed has shown us that they should be no less dear to us when viewed entirely from an economic standpoint. We hope he will give us more of this kind of literature.—F. E. L. BEAL.

CHECK LIST OF BRITISH COLUMBIA BIRDS.

By JOHN FANNIN, Curator of the Provincial Museum, Victoria, B. C.

This list forms a part—pages 13-55—of the 'Preliminary Catalogue of the Collections of Natural History and Ethnology in the Provincial Museum.' It enumerates 339 species and subspecies, with notes on their distribution, and will prove exceedingly useful to students of the bird-life of this interesting region, for a knowledge of the fauna of which we are so greatly indebted to Mr. Fannin.—F. M. C.

A PRELIMINARY LIST OF THE BIRDS OF BELKNAP AND MERRIMACK COUNTIES, NEW HAMPSHIRE, WITH NOTES. By NED DEARBORN, Biological Laboratories, New Hampshire College, Durham.

The author here presents the more important results of ten years' observation, including also such information as he has gathered from other naturalists concerning the 187 species recorded from the region of which he writes. Mr. Dearborn's notes, we are glad to say, are not restricted solely to statements concerning the rarity or abundance and manner of occurrence of a given species, but often contain valuable remarks on habits which show him to be a discriminating student of the living bird.—F. M. C.

Book News

THE origin of the present widespread interest in ornithology is so largely due to the influence of Dr. Coues' classic 'Key to North American Birds,' that we are sure bird students throughout the world will welcome the news that its author is engaged in a thorough revision of his epoch-making

work. The new edition, which will be expanded to fill two volumes, will be richly illustrated by Mr. Fuyertes, and while the advance made in the science of ornithology in the fifteen years which have elapsed since the publication of the second edition naturally leads us to expect some improvement in this forthcoming edition, our credibility in the powers of human achievement is severely taxed when Dr. Coues asks us to believe that the new 'Key' will be as far ahead of the second as the second was beyond the first.

THE Wisconsin 'Arbor and Bird Day Annual' for 1899, issued by L. D. Harvey, State Superintendent of Public Instruction (Madison, Wis.), is a most attractive and useful pamphlet of forty-five pages, containing original and selected contributions well suited to interest and instruct children in both the value and beauty of trees and birds. It may well stand as a model for publications of this nature.

D. C. HEATH & Co. have in preparation an elementary bird book by Fannie Hardy Eckstorm. The book is designed for use as a supplementary science reader, and it is the author's object to teach children what to see and how to see it; and, at the same time, to provide them with something to do.

THE May issue of 'Primary Education' (Educational Publishing Co.) is a 'Bird Day Number,' and contains numerous contributions of value to teachers and students of birds.

'Our Dumb Animals,' the vigorously edited organ of the Massachusetts Society for the Prevention of Cruelty to Animals, says of BIRD-LORE: "We recommend this publication to ex-Presidents Cleveland and Harrison. *It would have much interested President Lincoln.*"

'By the Way-Side' is the name of a bright little four-page bi-weekly issued by Helen M. Boynton, 118 Michigan, street, Milwaukee, Wisconsin, at one cent a copy. It is devoted to "birds, butterflies, trees, flowers, insects and fishes, and deserves the support of everyone interested in popularizing the study of these subjects.

Bird-Lore

A Bi-monthly Magazine

Devoted to the Study and Protection of Birds

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

Published by THE MACMILLAN COMPANY

Vol. 1

JUNE, 1899

No. 3

SUBSCRIPTION RATES.

Price in the United States, Canada, and Mexico, twenty cents a number, one dollar a year, postage paid.

Subscriptions may be sent to the Publishers, at Englewood, New Jersey, or 66 Fifth avenue, New York City.

Price in all countries in the International Postal Union, twenty-five cents a number, one dollar and a quarter a year, postage paid. Foreign agents, MACMILLAN AND COMPANY, LTD., London.

Manuscripts for publication, books, etc., for review, should be sent to the Editor at Englewood, New Jersey.

Advertisements should be sent to the Publishers at Englewood, New Jersey, or 66 Fifth avenue, New York City.

COPYRIGHTED, 1899, BY FRANK M. CHAPMAN.

Bird-Lore's Motto:

A Bird in the Bush is Worth Two in the Hand.

It has recently been remarked that the field ornithologists of to-day are of two kinds: first, those who collect; second, those who observe. The status of these two types of ornithologists, and the parts they play in the advancement of the science of ornithology, is a subject of the utmost importance to every one interested in the study of birds.

A consideration of it leads us to review briefly the progress which has been made in our knowledge of North American birds during the past twenty-five years. At the beginning of this period the Smithsonian Institution contained the only large collection of North American birds in the world, and our data concerning the exact distribution and relationships of even our commonest species was of the most meager character. Since that date the publication of Baird, Brewer and Ridgway's 'History of North American Birds', of Coues' 'Key' and Ridgway's 'Manual'; the organization of the American Ornithologists' Union and of the Biological Survey of the Department of Agriculture, and

the establishment of several natural history museums, have given a wonderful impetus to the collecting of birds. Naturalists have explored every corner of the eastern United States, and, with almost equal thoroughness, the western states, and the fruits of their labors are shown in the large series of birds now possessed by our leading museums. In fact, we have now reached a point where only a thoroughly trained ornithologist or his personally directed assistants can make collections which will be of real scientific value. Indiscriminate collecting, therefore, particularly in the eastern United States, in ninety-nine cases out of a hundred will only result in the duplication of material already existing.

Not only has there been a great advance in the requirements of collecting, but in the study of the specimens collected, and the systematic ornithologist who would hope to add anything to our knowledge of the distribution and relationships of any group of North American birds, must possess advantages which can be afforded only by well-equipped museums.

Turning, now, to the other class of ornithologists, the collectors of facts, we find that they have been far less active than collectors of skins. Thus, while we rarely or never refer to Wilson or Audubon or Nuttall for information concerning the systematic position of a species, these early writers are still authorities on facts connected with the life histories of many of our birds.

This subject has been brought very forcibly to our mind by two papers published in this number of BIRD-LORE, and, without going into details, we wish collectors of birds and their eggs would read carefully the articles entitled 'The Cardinal at the Hub' and 'Home-Life in a Chimney,' and then tell us frankly whether they do not think that the facts therein set forth constitute a more valuable contribution to the science of ornithology than a Cardinal's skin and five white egg-shells. If they are both discriminating and sincere, we believe they will admit the truth of BIRD-LORE'S motto.

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 (President of the Audubon Society of the State of Connecticut), Fairfield, Conn., to whom all communications relating to the work of the Audubon and other Bird Protective Societies should be addressed.

DIRECTORY OF STATE AUDUBON SOCIETIES

With names and addresses of their Secretaries.

New Hampshire.....	MRS. F. W. BATCHELDER, Manchester.
Massachusetts.....	MISS HARRIET E. RICHARDS, care Boston Society of Natural History, Boston.
Rhode Island.....	MRS. H. T. GRANT, JR., 187 Bowen street, Providence.
Connecticut.....	MRS. HENRY S. GLOVER, Fairfield.
New York.....	MISS EMMA H. LOCKWOOD, 243 West Seventy-fifth street, New York City.
New Jersey.....	MISS ANNA HAVILAND, 53 Sandford Ave., Plainfield, N. J.
Pennsylvania.....	MRS. EDWARD ROBINS, 114 South Twenty-first street, Philadelphia.
District of Columbia.....	MRS. JOHN DEWHURST PATTEN, 3033 P street, Washington.
Wheeling, W. Va. (branch of Penn. Society).....	ELIZABETH I. CUMMINS, 1314 Chapline street, Wheeling.
Ohio.....	MISS CLARA RUSSELL, 903 Paradrome street, Cincinnati.
Indiana.....	AMOS W. BUTLER, State House, Indianapolis.
Illinois.....	MISS MARY DRUMMOND, Wheaton.
Iowa.....	MISS NELLIE S. BOARD, Keokuk.
Wisconsin.....	MRS. GEORGE W. PECKHAM, 646 Marshall street, Milwaukee.
Minnesota.....	MRS. J. P. ELMER, 314 West Third street, St. Paul.
Texas.....	MISS CECILE SEIXAS, 2008 Thirty-ninth street, Galveston.
California.....	MRS. GEORGE S. GAY, Redlands.

A Bird Class for Children

One of the most frequent questions asked by those seeking to win children to an appreciation of birds is, "How, when we have awakened the interest, can we keep it alive?"

The only way to accomplish this, to my thinking, is to take the children out-of-doors and introduce them to the 'bird in the bush,' to the bird as a citizen of a social world as real in all its duties and requirements as our own.

There is a group of people with ultra theoretical tendencies, who insist upon considering the bird merely as a feathered vertebrate that must not be in any way humanized, or taken from its perch in the evolutionary scheme, to be brought to the plane of our daily lives. In teaching children, I believe in striving to humanize the bird as far as is consistent with absolute truth, that the child may, through its own love of home, parents, and its various desires, be able to appreciate the corresponding traits in the bird. How can this best be done? By reading to children?

That is one way; and good, accurate, and interesting bird books are happily plentiful. But when the outdoor season comes, little heads grow tired of books, and anything that seems like a lesson is repugnant.

Then comes the chance to form a bird class, or a bird party, if the word class seems too formidable. A dozen children are quite enough to be easily handled. The ages may range from six to twelve. Arrange to have them meet outdoors once a week, in the morning, during June and July. A pleasant garden or a vineclad piazza will do for a beginning; it is inadvisable to tire children by taking them far afield until they have learned to identify a few very common birds in their natural surroundings.

Children who are familiar with even the very best pictures of birds must at first be puzzled by seeing the real bird at a distance, and perhaps partly screened by foliage. The value of the outdoor bird class is, that to be successful it must teach rapid and accurate personal observation.

"Very true," you say, "but the birds

will not stay still while the children are learning to observe." Yes; yet this difficulty may be met in two ways. If you are so situated that you can borrow say twenty-five mounted birds from a museum or the collection of a friend, you will have a very practical outfit.

Choose four or five birds, not more for one day, take them outdoors, and place them in positions that shall resemble their natural haunts as much as possible. For example, place the Song Sparrow in a little bush, the Bluebird on a post, and the Chippy on a path. Let the children look at them near by and then at a distance, so that a sense of proportion and color value will be developed unconsciously.

After this, the written description of the habits of the birds, which you must read or tell the children, will have a different meaning. This method may be varied by looking up live specimens of the birds thus closely observed.

"True," you say again, "but I cannot beg or borrow any mounted birds."

Then take the alternative. Buy from the Massachusetts Audubon Society, 234 Berkeley St., Boston, for a dollar, one of its Audubon Bird Charts. This chart is printed in bright colors and is accompanied by a little pamphlet describing the twenty-six common birds that are figured. These are the (1) Downy Woodpecker, (2) Flicker, (3) Chimney Swift, (4) Ruby-throated Hummingbird, (5) Kingbird, (6) Bluejay, (7) Bobolink, (8) Red-winged Blackbird, (9) Baltimore Oriole, (10) Purple Finch, (11) American Goldfinch, (12) Chipping Sparrow, (13) Song Sparrow, (14) Scarlet Tanager, (15) Barn Swallow, (16) Cedar Bird, (17) Red-eyed Vireo, (18) Black and White Warbler, (19) Yellow Warbler, (20) Catbird, (21) House Wren, (22) Chickadee, (23) Golden-crowned Kinglet, (24) Wood Thrush, (25) American Robin, (26) Bluebird. Cut the birds carefully from the chart, back them with cardboard, and either mount them on little wooden blocks, like paper dolls, or arrange them with wires, so that they can be fastened to twigs or bushes.

You will be surprised to find how this scheme will interest the children, who may be allowed sometimes to place the birds themselves.

For those too old for the cut-out pictures, the teachers' edition of 'Bird-Life', with the colored plates in portfolios, will be found invaluable. The separate pictures may be taken outdoors and placed in turn on an easel behind a leaf-covered frame, with excellent effects—a few natural touches and the transition from indoors out often changing one's entire point of view.

One thing bearing on the question of bird study. If children ask you questions that you cannot answer, as they surely will, do not hesitate to say "I don't know." Never fill their minds with fables disguised as science, that they must unlearn.

Now a material point. When you have entertained your class for an hour, never more, lend the affair a picnic ending and give them a trifling lunch before they go; something very simple will do—cookies and milk, or even animal crackers!

The young animal of the human species, as well as many others, is a complexity of stomach and brain, and it is well to administer food to each in just proportion.

M. O. W.

Reports of Societies

WISCONSIN SOCIETY

Mrs. Elizabeth W. Peckham, secretary of the Wisconsin Society, sends to Mr. Stone the first annual report of that body, from which we extract the following:

"This society was organized April 20, 1897. The first efforts of the executive board were in the direction of securing the coöperation of the press in this city and throughout the state. The response was most generous, and it is probable that more effective work has been done through this agency than in any other way.

"The next appeal was to clergymen of all denominations, who were asked to preach upon the fashion of wearing wild bird feathers. Here, again, they received valuable aid and encouragement.

"In May, 100 circulars were sent to Milwaukee milliners, asking their assistance in the work of reform, and announcing that there would be held, in the fall, an Audubon millinery opening. This opening, which took place in October, was well attended, and served its purpose in calling attention to the existence and meaning of the society.

"The coöperation of the State Superintendent of Public Instruction, and also of the Board of School Directors of this city, has been secured. The response of the Milwaukee School Board was especially cordial and encouraging. Talks upon the subject of bird protection have already been given in several of the city schools, and it is intended that the main work of the society for the coming year shall be done among the teachers and school children of the state.

"The society is much to be congratulated in that, before it came into existence, Bird Day had been established in Wisconsin. We can only appreciate our good fortune in this respect by noting the difficulties that are thrown in the way of the Audubon societies of other states when they attempt to win the consent of their legislatures to this step. We owe this great advantage to Mr. J. E. Morgan, of Sauk county.

"Although our Audubon Society is one of the largest in the United States, we are working under great disadvantages, since we have, so far as we can discover, the smallest income of them all. In order that no one may be excluded, we have made our life membership fee exceedingly small, so that it brings in an amount quite insufficient to meet the expenses of printing, buying and distributing literature. We therefore make an earnest appeal to intelligent men and women to become members of the society, or to send us contributions of money. We are especially anxious to increase the number of our associate members, who pay one dollar a year, and thus provide us with a steady income."

Mrs. Peckham reports a total membership of 5,141, and writes that since the

publication of the report from which we have just quoted, "through the coöperation of our State Superintendent of Public Instruction, our society has formed 175 branches among the school children. These branch societies include over four thousand members, including teachers and children."

NEW HAMPSHIRE SOCIETY

On the 6th day of April, 1897, at the call of Mrs. Arthur E. Clarke, a meeting was held at her residence in Manchester, for the purpose of organizing the New Hampshire Audubon Society, which was duly accomplished.

The work of the society throughout the state is carried on by means of branch societies, the presidents of which act as vice-presidents of the state society; or, when this is not practicable, local secretaries are appointed to carry on the work, and such secretaries have already been appointed in more than twenty places.

Special pains has been taken to influence the children in the public schools. A junior Audubon society was early formed, and a very interesting meeting was held in June, 1897, at which about three hundred school children were present. A similar meeting was held in June, 1898, and it is proposed to hold others from time to time.

With the same end in view, an 'Outline of Bird Study' was prepared for use in the schools.

At the suggestion of the society, extracts from the game laws of the state, relating to penalties for the destruction of song birds and their eggs, have been posted in conspicuous places, thanks to the prompt and energetic action of the street and park commissioners. Similar action has been taken in various other cities and towns.

Lectures were given by Mrs. Orinda Hornbrooke, Mrs. Alice Freeman Palmer, on 'The Educational Side of Bird Protection,' and by Mrs. Harriet E. Richards, secretary of the Massachusetts

society, on the general work of the Audubon societies.

The society has distributed nearly 7,000 leaflets and circulars, several of them having been procured of the United States government, through the kindness of our members of Congress.

An additional circular has recently been issued in which prizes are offered to the school children of New Hampshire on the following conditions: Two prizes, one of ten dollars and one of five dollars to children over twelve and under seventeen years of age; and two more, one of five dollars and one of three dollars to children under twelve years of age. These prizes are to be awarded for the best compositions on 'Birds,' the compositions to be written as the result of personal observation, the contest to close January 1, 1900.

The society has adopted the bird chart lately published by the Massachusetts Society, and is introducing it as rapidly as possible into the schools of the state.

ANNIE V. BATCHELDER, *Sec'y.*

A Message from Madame Lehmann

At the second annual meeting of the New York State Audubon Society, Madame Lilli Lehmann, whose love of animals is perhaps even greater than her love of music, made an eloquent appeal to women to cease from feather-wearing, which she characterized as a form of barbarism, and to aid the Audubon Societies in their efforts to protect the birds.

Through the editor of BIRD-LORE, she sends to the Audubon Societies the following message, the tenor of which, it will be noticed, is in close accord with the views of the editor of this Department, as expressed in the last issue of this Journal.—F. M. C.

Madame Lehmann writes: "Tell the Societies that I take the greatest interest in their work, that I do everything I can, and every minute, if the occasion offers, to protect the birds.

"Tell them, also, that it is the duty of everyone to *spea*k and to *do* something every day for the cause; that it is not

sufficient to give a dollar or two—that alone will never help us. It is the living word, the reasons given, the good example and the *teaching* to everyone that can bring us further in civilization."

Two New Audubon Societies

We announce with pleasure the formation of Audubon Societies in Texas and in California. The Texas Society was organized on March 4, at Galveston, with Miss Cecile Seixas as secretary. The organization of the California Society was lately completed at Redland, with Mrs. Geo. S. Gay as secretary. The addresses of the secretaries of these societies are given in our 'Directory,' and we trust that they will receive the coöperation of all bird-lovers in their respective states.

American Society of Bird Restorers

A report of the work of the American Society of Bird Restorers, prepared by Mr. Fletcher Osgood, its organizer and manager, will appear in BIRD-LORE for August.

Birds and Farmers

It is pleasing to know that some farmers are awakening to the fact that birds are an important factor in agriculture. At the last monthly meeting of the Farmers' Club of the American Institute of New York, the subject for discussion was "Birds and Their Relation to Agriculture." The subject was introduced by Mr. N. Hallock, who presented a well prepared paper giving much valuable information regarding birds as insect destroyers. These statistics were from publications of the U. S. Dept. of Agriculture and from his own observations. He strongly urged the protection of all birds from the farmer's standpoint. The paper was then discussed by the members present. Mr. William Dutcher, of the Executive Committee of the New York Audubon Society, who was present, addressed the Club, elaborating some of the statements in the paper under discussion and emphasizing the fact that every bird an agriculturist permitted to be killed on his farm was a direct loss to him in money value.

NATURE STUDY FOR GRAMMAR GRADES

A Manual for the Guidance of Pupils below
the High School in the Study of Nature

BY

WILBUR S. JACKMAN, A.B.

Dep't of Natural Science, Chicago Normal School

Author of "Nature Study for the Common Schools," "Nature Study and Related Subjects,"
"Nature Study Record," "Field Work in Nature Study," etc.

REVISED EDITION

In preparing this Manual, it has been the author's aim to propose, within the comprehension of grammar school pupils, a few of the problems which arise in a thoughtful study of nature, and to offer suggestions designed to lead to their solution.

That pupils need some rational and definite directions in nature study, all are generally agreed. But to prepare the outlines and suggestive directions necessary, and to place these within the reach of each pupil, is more than any ordinary teacher has time to do, even granting that she is fully prepared for such work. The utter futility of depending upon oral suggestions during the class hour, when the pupils are supposed to be doing individual work, is easily apparent on a moment's reflection. With a manual of directions in hand, each pupil may be made strictly responsible for a certain amount of work, either in the field or in the laboratory. This removes all occasion for that interruption in his work, which is, otherwise, due to the pupil's attempt to *think* and at the same time *hear* what the teacher says.

RECENT PUBLICATIONS ON NATURE STUDY

Bailey's Lessons with Plants \$1.10
Suggestions for Seeing and Interpreting some
of the Common Forms of Vegetation.

Bailey's First Lessons With Plants . . 40 cts. *net*
"Extremely original and unusually practical."

Ingersoll's Wild Neighbors \$1.50
"Instructive as well as delightful."—*Popular
Science Monthly*.

Lange's Hand-Book of Nature Study . . . \$1 *net*
"The style of the book is fresh and inspiring."

Murehó's Science Readers.
Vol. I. 25 cents. Vol. IV. 40 cents *net*.
Vol. II. 25 cents. Vol. V. 50 cents *net*.
Vol. III. 40 cents. Vol. VI. 50 cents *net*.

Weed's Life Histories of American Insects. . \$1.50
"An unusually attractive book."—*Dial*.

Wilson's Nature Study in Elementary Schools.

FIRST NATURE READER 35 cents
SECOND NATURE READER 35 cents
TEACHER'S MANUAL 90 cents

Wright's Citizen Bird \$1.50 *net*
An interesting story, giving to the children
much accurate information about American
birds.

"Most delightful book on the subject yet
printed in the United States. I wish every
boy and girl could read it."—J. M. GREEN-
WOOD, Sup't Kansas City, Mo.

Wright's Four-Footed Americans \$1.50 *net*
Four-Footed American Mammals treated in
story form in the manner of *Citizen Bird*.

Wright's Birdcraft \$2.50 *net*

PUBLISHED BY

THE MACMILLAN COMPANY, New York



NESTING SITE OF CLIFF OR EAVE SWALLOWS, LITTLE MEDICINE RIVER,
CARBON COUNTY, WYO.

Photographed from nature by H. W. Menke, July 4, 1898

Bird = Lore

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

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. 1


AUGUST, 1899

No. 4

Photographing Shy Wild Birds and Beasts at Home

BY R. KEARTON, F. Z. S.

Author of "Wild Life at Home: How to Study and Photograph It;"
"With Nature and a Camera," etc.



MY brother and I were both delighted to see the first number of BIRD-LORE, and take the opportunity of congratulating our naturalist and photographic chums across the Atlantic upon having such a practical and highly interesting magazine to help them in their enchanting pursuits. Such a publication would have been a veritable godsend to us when we started our natural history photography.

As we have had a good deal of experience in circumventing the cunning and timidity of the majority of wild creatures living in the British Isles, and the same characteristics in this respect are common to wild animals all the world over, I propose to tell by what means we have secured some of our rarest pictures.

First of all, I ought to explain that we never use anything but a strongly built, half-plate stand camera, fitted with a Dallmeyer stigmatic lens, and an adjustable miniature on the top, which is used as a sort of view-finder when making studies of flying birds and mammals in motion. When fixed in position, and its focus has been set exactly like its working companion beneath it, both are racked out in the same ratio by the screw dominating the larger apparatus which, when charged with a dark slide and stopped down according to the requirements of light and speed of exposure, needs no further attention. When the combination is in use, the photographer focuses with his right hand, and, holding the air ball or reservoir of his pneumatic tube in his left, squeezes it quickly and firmly directly he has achieved a sufficiently clear and strong definition of his object upon

the ground glass of the miniature camera. This enables the operator to focus up to the last instant, and to select the best attitude of his "sitter."

We have a silent time-shutter built in behind the lens, and for very rapid work, such as flying bird studies, use a Thornton & Pickard focal plane shutter working up to the thousandth part of a second.

Good apparatus, that will work under almost any conditions with precision and certainty, must be possessed for the achievement of successful natural history work. We use the quickest plates made in the old country for the greater part of our work, although, of course, for still objects full of color, we cannot beat Ilford chromatic plates.



IN THE TREE-TOPS

From Kearton's 'Wild Life at Home,'
copyrighted by Cassell & Co., Ltd.

We soon discovered that it was absolutely impossible to figure many timid birds at close quarters without some natural contrivance in which the camera and its operator could be effectually hidden. For the study of wood birds at home, we built an artificial tree trunk of sufficient internal capacity to contain either of two broad-shouldered Yorkshiremen. This is how we made it. Purchasing three pieces of stout bamboo, each 7 feet in length, I split them down the center and lashed each piece to three children's bowling hoops, the topmost and center ones being 24 inches in diameter, and the bottom one 27, so as to represent the base of a tree and give the legs of our camera a greater stride. We then covered the whole with galvanized wire and a coat of green American cloth, which my wife painted to resemble the bark of a tree. After this we stuck bits of lichen and moss on to it, and then passed a number of bits of strong grey thread from the inside to the out. With these we tied on several pieces of ivy stripped from adjoining tree trunks, so as to make our contrivance look as natural as possible. How far we succeeded in deceiving the feathered folks of Britain may be judged, when I state that one day a Chaffinch alighted on the broken top of our artificial forest monster and began to rattle off its song just over the unseen photographer's head.

We should much like to hear of this device being tried by some-

one on American wood birds. Whoever makes and gets laced up inside an artificial tree trunk will discover that a peculiarly dizzying sensation attends the first attempt or two to stand for any length of time so encased.

For some birds we fix up a mock camera near their nests or feeding haunts a few days before we attempt to make a picture. This can be easily done with a small wooden box and tin canister with its lid or bottom blackened to represent a lens.

For photographing ground builders, such as Larks, Plovers, and so on, we built an artificial rubbish heap, such as farmers rake up off their grass land before laying it down to grow for hay time, and cart off to form rick bottoms.

This we made from an old umbrella, to the ribs of which we lashed pieces of bamboo four feet in length. The whole was then covered with brown holland. To the outside we tied innumerable wisps of straw and rubbish, and as some sort of testimony to its efficacy, I need only mention that we have succeeded in photographing a Lark at her nest bang in the middle of a bare field, and one of our very shyest British Plovers, quite recently, sitting on its nest within a few feet of the lens.

We next come to a consideration of how to photograph the eyries, eggs and young of such birds of prey as Eagles, Falcons and Ravens, that breed, at any rate so far as Britain is concerned, in the most inaccessible cliffs.

The first business is to secure a couple of climbing ropes. We had ours specially manufactured for us, from the best manila hemp, by a London rope-maker of good repute. They are each two hundred feet in length. The guide rope is an inch and a half in circumference, and the descending rope, which has three loops at one end for the photographer to sit in, is two inches in circumference. It will thus be seen that both ropes are pretty stout, some folks might say unnecessarily stout, but it is better to be on the safe side, as a break and a fall of three or four hundred feet onto jagged crags or into the sea would be likely to send the photographer into perpetual retirement.

It is a curious thing, but nevertheless true, that fictionists have fixed one idea in the mind of the public in regard to the danger attending a man hanging over a precipice on the end of a rope; viz., that all his danger comes from a probability of one or two of the strands of his rope getting chafed in two over some sharp rock. I am frequently asked, after my lectures, the question: "Has your brother ever had a narrow escape from the rope nearly getting chafed in twain?" They seem genuinely disappointed because he has not

been hauled up on the last faithful strand of a rope, with his hair standing on end, his face o'erspread with an unspeakable horror, and then fainted dead away on reaching *terra firma*.

I have heard a lot of terrible tales about chafing ropes, but as



DESCENDING AN OVERHANGING CLIFF

From Kearton's 'Wild Life at Home,' copyrighted by Cassell & Co., Ltd.

a matter of fact, there are dangers a thousand times greater if less picturesque; such, for instance, as a prosaic little stone, no bigger than an orange, being dragged out of its bed by one of the ropes when the

photographer is being hauled up a cliff, and, after dropping a hundred feet or so, alighting plump on the head of the unsuspecting camera man. My brother has had one or two narrow escapes of this kind, though never the shadow of one from a chafing rope.

Upon setting forth to photograph the eyries of cliff-breeding



PHOTOGRAPHING A CORMORANT

From Kearton's 'Wild Life at Home,' copyrighted by Cassell & Co., Ltd.

birds, we equip ourselves with (1) our ropes; (2) a stout crowbar; (3) a good, strong, level-headed assistant (nervous or careless assistants should be studiously avoided, as the one kind of man is as dangerous as the other), that can be relied upon; (4) a revolver; (5) a camera; (6) a photographer who, in addition to being a good athlete

and gymnast, possesses no nerves at all, and can, in consequence, stand on the very lip of a cliff a thousand feet sheer, as he would do on the gutter edge of a sidewalk, and look straight below him.

I would advise all who do not possess the above qualities, more or less, to leave cliff photography severely alone, as walking backwards into a yawning abyss, even on the end of a good, stout rope, feels uncommonly like stepping into eternity, and I would not like to have the blood of any American cousin on my head.

Upon reaching the edge of any precipice wherein we suspect, say an Eagle, to be breeding, we step as close to the lip of the crag as possible. I hold the revolver over my head, fire, and watch to see where a bird flies out. Should one do so we mark the spot, drive our crowbar into the ground above it, tie one end of the guide rope securely to it and fling the rest down into the chasm below. The photographer lashes his camera to his back, dons the three loops at the end of the descending rope round his hips, the rope is then passed once round the crowbar, and the assistant pays it out from behind, whilst the photographer, steadying himself by means of the guide-rope, literally walks backwards down the cliff. Before going down, however, he takes good care to clear away all the loose stones and rubble, for if he did not do so they would be sure to be dislodged by the rope when he comes up.

Upon reaching an eyrie, if it is situated on a ledge wide enough to set the tripod of the camera on, he does so and makes his studies, taking good care not to let go his ropes.


If the nest should be on a ledge too narrow to set the apparatus upon, my brother passes two of the legs of his tripod through a belt round his waist and the third into any convenient crevice he can find, and with his body practically at right angles to the face of the crag and his camera almost resting on his chest, focusses and takes his picture.

I feel that I have barely touched the fringe of my subject in this short article, but I have no doubt that to the man equipped with a decent camera and a genuine love of nature, the hints I have given will be sufficient to set him to work natural history picture-making, and, as an old farmer, I know enough of American ingenuity in tool-making to convince me that there is no bird or beast living in the western world that cannot be photographed, living, loving, and laboring in its free, open-air home. Any way, every reader of BIRD-LORE has the best wishes of the brothers Kearton.

Two Nova Scotia Photographs

BY C. WILL BEEBE

With photographs from nature by the author.



THE slate-colored Junco or Snowbird breeds very abundantly in the fields of Digby county, Nova Scotia, and its neat nests are often so artistically placed that they are a continual temptation to the naturalist photographer. One nest, in particular, with four eggs, was especially beautiful, seen through the ground glass of the camera, the contrast between the eggs and the waxy green leaves and scarlet fruit of the bunch-berries near it making one long for color photography. This nest was in a field, five feet from a road, and partly protected by a tiny bank of turf.



NEST AND EGGS OF JUNCO

Five days after the photograph was taken the eggs hatched, and four balls of long, jet-black fuzz appeared. Daily twelve-hour meals of green measuring-worms, provided by the parents, wrought marvels in the appearance of the young birds, and in a surprisingly short time a second suit of streaked black and brown was assumed. In this, perhaps, the facsimile of their ancestors' plumage, they left the

nest, and apparently lost individuality among the large flocks of their species.

Another abundant summer bird of this part of Nova Scotia is the Night-hawk, the name being almost a misnomer, as they are visible in numbers, flying all day. But all do not depart from their usual custom of sleeping during the day, as is shown in the accompanying photograph, taken about 11 A. M. one August day, 1898.




NIGHT-HAWK ASLEEP

While walking along a railroad track, I noticed this bird resting in a fallen trunk about four feet from the track. I focused my camera and made the exposure without disturbing the bird in the least. A train had passed not long before, so it could hardly have been asleep more than an hour. The characteristic longitudinal position assumed by this bird in perching is well shown, and its protective coloring makes it appear a mere excrescence on the bark.

When it awoke what a dream it might relate to its companions of being approached by a horrible one-eyed, three-legged creature, which at a glance made it immortal!

The photograph of the Junco's nest and eggs was made with a 128 opening and a 4-second exposure, while that of the Night-hawk was stopped at 64, with an exposure of two seconds.



In the *Spartina* with the Swallows

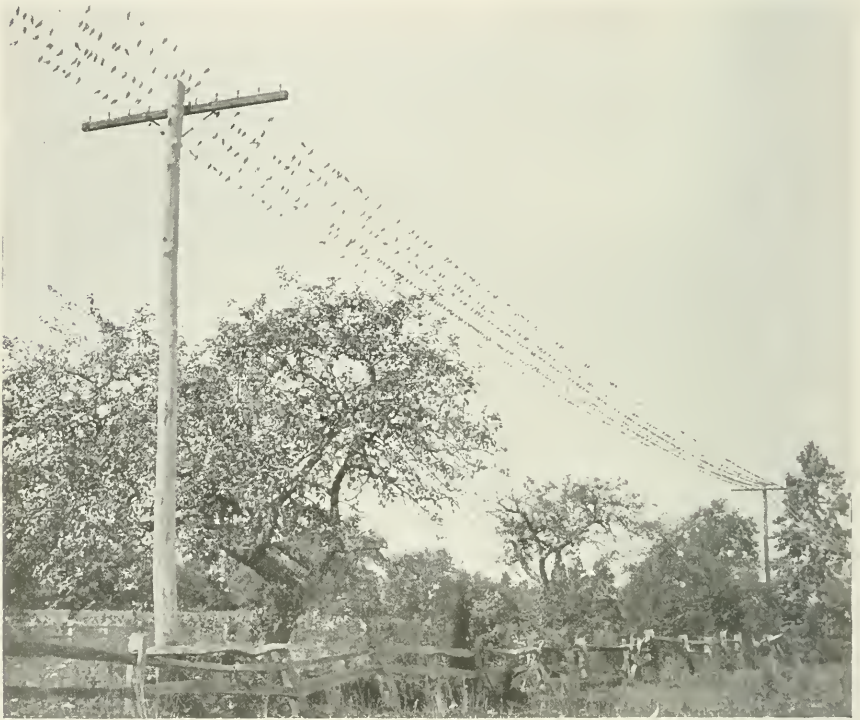
BY O. WIDMANN

MAPLE LAKE, in St. Charles county, Mo., is one of a series of lakes situated between the bluffs and the Mississippi River. The bluffs are four to five miles from the river bank, thus leaving a wide stretch of alluvial land, lowest toward the bluffs, forming an extended, nearly level marsh, mostly too wet and poor for cultivation, and covered with square miles of cord-grass (*Spartina cynosuroides*). In dry summers or on higher levels it reaches only a height of three or four feet, but in wet summers, as for instance in 1898, it attains the stately height of six to eight feet, with such a dense growth of rigid leaves that it is hard work to walk or even drive through. As a commercial article it is worth very little, though it will make good paper. When young it is liked by horses and cattle, and when two feet high it makes pretty good hay, which is sometimes baled and sold as prairie hay.

But while man does not yet know how to make good use of it, birds do, especially some species of the families Hirundinidæ and Icteridæ—the Swallow and Blackbird families—who find in the spartina the material for a good and safe dormitory. Hundreds of acres of this grass cover the region about Maple Lake, and as they are within the confines of one of the best managed club grounds, where neither plow nor cattle, neither drainage nor fire are allowed, they serve many kinds of birds for a roosting place at all seasons of the year, but especially in fall migration.

Of Swallows, the most numerous frequenters are the Eaves, the Tree or Whitebreasts, and the Roughwings, and they show their appreciation of this rare place of security and peace by coming early in the season and staying late. When the Eaves have become strangers at their breeding stations for a long time, the marsh is the place to find them in plenty. Here is the place to look for the first Whitebreast of the year as early as the second week of March, and for the last, in the third week of October. For two months, from the middle of August to the middle of October, a cloud of Swallows may be seen every evening, just before dark, hovering over the most remote and inaccessible part of the immense spartina waste, and wherever you are in the marsh in the late afternoon, you cannot fail to notice innumerable Swallows skimming the grassy ocean and the adjacent lakes. If toward sunset you watch them closely, you will find that, though they may linger long on some favorite hunting ground, the general

trend is toward one particular region, and if you will wait long enough, you will find that they have all disappeared in that direction and that, when almost dark, belated parties passing by go in a straight line direct for the same unknown destination. Certainly a most interesting sight for the naturalist to see so many of these lovely, lively, likely creatures passing over, about and around you,



TREE OR WHITEBREASTED SWALLOWS

Photographed from nature by Edward Van Altena, Alpine, N. J., September, 1898

all governed by one idea, all driven by one common impulse, all eager to reach the same aim, the common roost! Where is the roost? Where do all these birds spend the night? How do they retire in the evening, and what is their conduct when they leave their night-quarters in the morning?

In spite of their large numbers and generally unconcealed activity, the answer to these questions is not quite easy. Otherwise confiding creatures, Swallows are careful to keep the exact location of their roost as much as possible a secret from the outer world. Neither the persons who live in the neighborhood of the marsh, nor the hunters who desecrate its sanctity, could tell you where

the Swallows roost. It requires the persistent efforts and full attention of the naturalist to show you where and how his favorite bird goes to rest and how it sets out and enters upon the duties and pleasures of another day. You have to be after nightfall, alone with the mosquitos and other pests, in the wide, wet and pathless marsh, and again before the faintest glimmer announces the approach of day.

But select a day in the latter part of August or the first half of September, and follow me. We are up early, to be on the grounds before 5 A. M.; the stars are vanishing, one after the other, and the first dawn appears on the eastern horizon; the air is cool and misty, the grass loaded with heavy dew, but we have to plow our way through as best we can. By previous observation we have located the whereabouts of our birds, and we are now fast approaching their sanctum, all alive and alert for the expected disclosures.

Before this, only the hooting of the Barred Owl in the distant woods had broken the silence, but now comes from the depth of his private retreat, the sleepy 'seewick' of the Henslow's Sparrow, and at the same time the weak but lively 'chip chip churr' of the Short-billed Marsh Wren. 'Pink, pink, pink' exclaims the Bobolink, whom we have startled from his slumber of repose, and, as we advance, up go some Swallows, one by one, to the right, to the left, in front of us, not in masses or bunches, but singly, every few yards one or two flying up, silent, and on wings heavy with dew.

Dawn has been making fast progress the last few minutes, and we can see quite a little distance through the misty air. Now is the time when the Swallows begin of their own accord to leave their perch down in the depths of the *spartina* and fly with heavy wing through the cool and foggy layer below into the clearer atmosphere above, where the sun's first rays will soon dispel the chilly dampness of their plumage.

While we are still absorbed in the astounding spectacle, daylight is stealing quietly into the novel scene, and discloses the presence of greater and greater numbers of Swallows as far as the eye can reach. Many have gained enormous heights, and are soaring majestically in the sun-kissed zenith. Not so voiceless as the Swallows do the Bobolinks leave the roost. Their *pink* is continually in the air, and numerous parties are seen passing over, drifting into all directions of the compass. Some alight again, all in their yellow traveling suits, with the exception of one who has a little song for us and wears a somewhat mottled garb with whitish rump. Long-stretched flocks of Redwings pass in one direction, troops of Frackles in another; but, on the whole they do not

present anything like the grand spectacle they will later in the year, when migration sends millions of them to this marsh.

The sun is up now, and a little wind is stirring and dispels the clammy dampness of the air. Shortbills sing on all sides, and a few Marylands and Henslows are also heard to sing. Great Blue Herons are on the move, and the Marsh Hawk is at work. A Bittern wings its way across the marsh, attended by a committee of inquisitive young Eaves. There is a peculiar movement now among the Swallows. They seem to concentrate their forces. Let us follow them, and be treated to an unexpected sight.

Fifty thousand Eave Swallows are seated on the protruding tops of sunflowers, which grow here among the spartina in restricted areas, covering a few acres in the middle of the marsh! They sit, several on one plant, as close together as the branches and their weight allow. We draw nearer, until we are within twenty yards of the assembly. The birds must see us, but do not mind, and we have excellent opportunity to watch them. Their numbers are still swelling. The long, narrow, ridge-like stretch of sunflowers is filling up more and more. From the north comes a steady flow of Eaves, all bound for the convention.

It is now 6 A. M.: the influx of arrivals from the north has ceased, and all seem ready for the opening of the session: but they do not look as if they were going to transact important business. Some fly up from time to time, draw a few circles and sit down again. Most of them look tired, as if they had already performed a most fatiguing task. The majority are young fellows, all Eaves, in pale attire, some so small as if not fully grown; but there are also many adults in high dress among them. All are enjoying their rest, some are preening their feathers, others half close their eyes and puff up their plumage, as if going to sleep. There are still some high up in the ether enjoying their enviable wing power; others are hunting low over the marsh, in company with Whitebreasts.

Although the two species hunt, fly and roost together, they do not hold their meetings together. The Whitebreasts' assemblages are held over water. They betake themselves to a pond or lake, and find a perch on the pods, stalks and projecting leaves of the lotus (*Nelumbo lutea*), with which some of these shallow waters of the marsh are literally covered. There is a small pond only a quarter of a mile from the sunflower patch, and this is now just full of Whitebreasts. Now and then a little cloud of them rises from the pond, and after a few evolutions settles down again. There are only a few hundred; the height of their autumnal wandering is several weeks behind that of the Eaves. These are most numerous in late

August and early September : but, as their number decreases, that of the Whitebreasts increases, reaching the height at the time the Eaves depart.

In summer the roost belongs almost entirely to the Eaves, who flock here from the surrounding country. So do the Roughwings, a few hundred only, and some Barn Swallows and Whitebreasts, which two species are not numerous breeders in this region.

As soon as migration begins, about the middle of August, the



TREE OR WHITEBREASTED SWALLOWS

Immature birds on the ground gathering nesting material, which they drop after carrying a short distance, thus apparently giving a premature exhibition of the nest-building instinct

Photographed from nature by Frank M. Chapman, Leonia, N. J., August, 1897

Eaves are greatly reinforced, and for the next four weeks enormous numbers are present, but it is probable that they are not always the same individuals, as their numbers vary from day to day. It seems they perform their migrations by stages, from roost to roost, employing mainly the first hour of the morning for their flights, spending the day resting and feeding in the region surrounding the roost. The substitution of arriving Whitebreasts for departing Eaves is in the beginning almost imperceptible, but at last we see that the one has taken the place of the other entirely. The Roughwings become

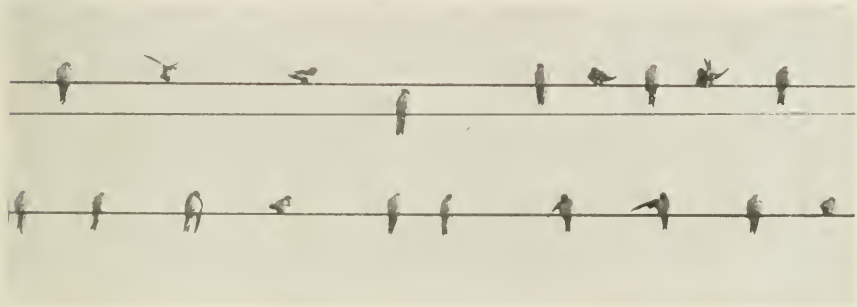
more numerous in early September, and many remain, with a few Barn Swallows, into October, but the latter are never conspicuous at this roost. Martins and Bank Swallows are only accidental visitors to this roost. The Whitebreasts remain numerous to the middle of October, and small detachments linger even a week longer.

Most of the Eaves that have been gathering on the sunflowers before 6 A. M. are still there at 8 A. M., and the Whitebreasts are also on the lotus yet; but an hour later, when the sun has heated the marsh and started the winged insects on their aerial mission, the time for activity has arrived, and the meetings are adjourned, the birds dispersed. We, too, will adjourn, with the promise to be back for another meeting in the evening. When migration is well under way, the collecting of the Eaves and Whitebreasts begins early in the evening: in fact, large droves are met at all hours of the day, playfully gyrating in the blue heavens above, or describing endless curves upon the glittering marsh beneath. The Roughwings are seldom seen in the marsh in daytime. As soon as they leave the roost at early dawn, they hurry away to their accustomed haunts along the water courses in the timber, where they collect on the branches of a dead tree on the bank, if possible over water. There they sit, soon after daybreak, fifty to one hundred together, silent and lost in meditation, patiently awaiting the dissipation of the vapory dimness, the signal for activity. They are greatly attached to these meeting-places, and resort to them often in daytime as well as in the evening. Indeed, these gatherings of Roughwings on certain dead trees along our woodland lakes and streams are quite a feature of the landscape from July till October. Often their ranks are considerably swelled by an admixture of other Swallows—oftenest the Bank Swallows, who join them on their entomologizing excursions, and find it congenial to spend some time on the same perch with their gentle cousins.

In fall migration, the different kinds of Swallows like to mix, hunt and rest together, and it is nothing rare to find four or five species sitting side by side. To be sure of a full view of the whole performance, we are in the marsh as early as 5 P. M., and take a stand west of the roost to have a good light, and also to be in a position where we can overlook part of Maple Lake, over which a large number of Swallows take their way. Indeed, we find them already plentiful, and watch their actions. A few dozens are sitting on the plant stalks projecting from the water, mostly Whitebreasts. From the west comes a pretty steady stream of Eaves. When they reach the spot where the Whitebreasts are gathering now, they pause a moment, and, hovering, take a drink, several at once, after which

they continue their course. Is it not strange that they seem to think that this is the only place for Eaves to drink, though the lake is half a mile long?

Bobolinks also arrive in the marsh: small parties pass over, and their *pink* is often in the air. It is now 5.30 P. M. More Eaves come, drink, and move on. We move, too, following them through the high spartina until we see in the distance an oasis of black dots in the yellow sea of grasses. While we are still advancing, a



'BIRD NOTES'—TREE SWALLOWS

Photographed from nature by Frank M. Chapman

Pigeon Hawk darts over our heads, going straight for the oasis. In less than no time the black dots take wing and up goes the whole congregation of Eaves, up, up, scattering to all winds, and disappearing for several minutes. But the disturber is gone, and the frightened birds find courage to return and sit down again on their favorite weeds, from which they can overlook the marsh for miles around.

The Bobolinks, for whose special benefit the Hawk's visit was this time meant, are still hovering in the air, but new troops arrive, and after some aimless drifting all settle down to roost amongst the grasses.

The sun is down now, and perfect streams of Swallows are flowing from all sides toward the oasis in the center. This is the moment when the Whitebreasts, who for the last hour have been congregating on the lotus of the neighboring lakes, mingle with the passing Eaves and accompany them to the common roost. The Roughwings, too, have left their haunts and are appearing in the marsh.

The light of day is waning fast, and the smoky air gets dim and misty. The assembled Eaves are now seen to rise in clouds from their oasis, mix their forces with the invading army, and the grandest

spectacle ensues. At first it looks as if confusion reigned, but soon the hosts of fleet-winged birds no longer whirl aimlessly through space. All mass and muster, and perform strange evolutions with amazing swiftness and precision. Now we see them scattering and spreading over the whole area on which they intend to roost, apparently to make sure that no danger lurks beneath the grasses. Here they come, skimming, almost touching, the spartina, pass by, and speed onward until lost to sight for a few moments, when all at once a great cloud of moving specks is visible in the distant sky. The specks are Swallows, and the cloud has life; it moves, it rolls, it swells, it comes, it breaks and, like a torrent of wing-borne arrows, darts upon us, scattering and spreading out, as it descends for another wild dash low over the spartina.

The same wonderful maneuvers repeat themselves as long as the evening twilight lasts, and, though with each descent the cloud does shrink in size, it does not cease to rise again until black night has fully settled down, and even after dark small droves of bewildered birds rush madly by our side. Being well within the range of the now settled birds, we cannot go away without disturbing some in their repose; although they are dispersed over a large area, every now and then one will be seen to scamper out and vanish in the darkness.



YOUNG EUROPEAN MARTINS AND NEST

Photographed from nature by "C. R."

Watching the Bittern 'Pump'

BY BRADFORD TORREY



SINCE I printed, in 'The Auk' (Vol. vi, p. 1), a description of the Bittern's vocal performances, I have witnessed a repetition of them on three occasions; and the story of my successes, such as they are, may be encouraging to the younger readers of BIRD-LORE.

The remarkable sounds, sometimes likened to those of an old-fashioned wooden pump, sometimes to those made by a man driving a stake in wet soil (and the likeness is unmistakable, not to say perfect, in both cases), must have attracted attention, we may suppose, ever since the settlement of the country. The dullest person could not hear them, it would seem, without wondering how and by what they were produced. But up to the time of my 'Auk' article, there was only one authentic record, so far as I am aware, that the bird had ever been seen in the act of uttering them. For my own part, having never lived near a meadow adapted to the Bittern's purposes, I had never so much as heard his famous 'boom,' though references to it here and there, in the writings of Thoreau especially, had given me a lively desire to do so. It was a strange accident, surely, that the first Bittern I had ever heard should show himself so openly and for so long a time. Beginners' luck, we may call it, and be thankful that such providential encouragements are not so very uncommon. As the Scripture says, "The last shall be first."

On the 2d of May, 1889, a year after the observations recorded in 'The Auk' article, I was lying upon a cliff on the edge of a cat-tail swamp, listening for Rail notes or a Least Bittern's *coo*, when a Bittern, very much to my surprise, pumped almost at my feet. By good luck a small wooded peninsula jutted into the swamp just at that point (the swamp, I regret to say, has since been converted into a town reservoir), and, keeping in the shelter of rocks and trees, I stole out to its very tip unobserved. Two or three times the notes were repeated, but I could get no sight of the performer. Then, all in a flash, he stood before me—as no doubt he had been doing all the while—in full view, just across a narrow space of open water against a patch of cat-tails. He had taken no alarm, and pumped six or eight times while I stood, opera-glass in hand, watching his slightest motion. Then he stalked away into the reeds, pumped twice,—behind the scenes, as it were.—and fell silent.

Two days later I went to the Wayland meadows, where I had

seen my bird of the year previous, and there, seated upon the railroad embankment, as before, I watched a Bittern pump at short intervals for more than an hour. Most of the time he was more or less hidden by the low grass, through which he was slowly traveling down the meadow; but once, coming near the remains of a last year's haycock, he went a little out of his way, mounted it, and boomed in full sight. The Bittern is a wader and a recluse, but once in a while, it appears, he has no objection to a clear platform and dry feet.

I felt myself highly favored. Twice within three days I had been admitted to "assist" at mysteries of which Thoreau, who spent his life in the best of Bittern country, had never obtained so much as a glimpse.

Exactly a year afterward (May 4, 1890) I was strolling along a road near home, when from a meadow beside it came the now familiar pumping notes. I made toward the spot, and by the help of a clump of alder bushes approached within a very short distance of the bird, who stood in short grass, quite unconcealed. A migratory visitor only, he must have been, for I am certain that no Bittern ever summered in that place during my years of residence near it. I watched him at his work till I was tired. Then, bethinking myself of a friend and neighbor who knew nothing about birds, but had once expressed to me a curiosity about the 'Stake-driver,' I walked to the village, rang his doorbell, and invited him to go back with me to see the show. The showman was still rehearsing, and we stole upon him without difficulty, and saw as much as we wished of his doings. Though it was Sunday morning, and the bird was as serious as any parson, we took the liberty of laughing a little at his absurd contortions.

Since then I have heard the Bittern's music on sundry occasions, but never have found it possible to come within sight of him in the act of making it. Once, I remember, I was sitting upon a roadside fence, reading, when a carriage stopped and an unrecognized feminine voice said: "Do you see that Heron behind you, Mr. Torrey?" The "Heron" was *Botaurus lentiginosus*, in a bit of low ground close by a house. I shut my book and gave him my attention, which he presently rewarded by catching and swallowing a snake. This was in autumn, when Bitterns, like lesser birds, are liable to turn up in unexpected quarters. The reader may take the incident, if he will, as a warning against the reading of print out of doors. As a general thing, we may safely say, Nature's page is better than a book.

One season a friend and myself became much interested in the question as to the relative 'carrying power' of the three notes or

syllables of which the Bittern's music is composed. The discussion began by our hearing a single far-away note, repeated at the proper intervals, at a time when we could not well follow it up. Later investigation, to our no small surprise, compelled us to settle down upon the conclusion that the first note was the one last to be lost as we traveled away from the bird. We were surprised, I say, for the second note is the one which bears, or seems to bear, the accent. *Plum-pud-d'n*, the creature appears to say, with an emphasis fairly to be called violent upon the middle note. Why, then, should not the middle note be heard farthest? What *is* emphasis, anyhow, if not, as the dictionary says, a "special force of voice." Could there be something peculiar, we asked ourselves, in the *quality* of the first syllable, which made it carry beyond the others? We discussed the matter eagerly, trudging to and fro to make certain of the fact itself, and agreed, if I remember rightly, upon a plausible explanation. As I review the case, however, I am so much in doubt as to the correctness of our theory that it seems quite as well not to state it, but to leave the question to any BIRD-LORE reader who may some day have nothing better to do than to investigate it for himself.

For Teachers and Students

Hints to Young Bird Students*



IT has always been our experience that young bird students who have just crossed the threshold of ornithology are glad to turn for a word of advice and assistance to their older brethren, who have already made some progress in the science: and it has always been a pleasure for us to give such aid. In view of these facts, we take this opportunity of offering a few words of counsel for the benefit of those who are beginning the study of birds.

Doubtless every beginner looks upon the formation of a collection as necessarily the first step on the ornithological ladder; and probably a collection of eggs is preferred to a collection of birds, because the specimens can be prepared much more readily.

*From a leaflet prepared under the initiative of Mr. Witmer Stone, Conservator Ornithological Section, Acad. Nat. Sci., Philadelphia. These "hints" are addressed to students who desire to become scientific ornithologists and to whom specimens are a necessity. They show, however, how few specimens are required, and how much more there is to learn from living birds than from dead ones.

Soon you meet complaints from well meaning persons who object to robbing birds' nests, and you reply that you are collecting for scientific purposes. Very good: science has need of you all, but do you know what scientific ornithology—real ornithology—is?

Are you not influenced, to some extent, at least, by "oölogical" magazines and dealers' price-lists of eggs, from which you learn that it is important to secure *series of sets*,—which means hundreds and thousands of eggs,—and wherein you also learn the market price of this or that egg, and value your specimens accordingly,—just as you do your postage stamps? This is not science, and the men who advocate this sort of collecting, and who have the largest collections of eggs, rarely contribute anything to our knowledge of birds, and are not advancing the science of ornithology.

If you must have a collection, a few sets of eggs (often a single set) of each species of bird will answer all your purposes. There is nothing to be gained by the collecting of a series, except the extermination of the birds, which is surely not your object.

On the other hand, there is a vast amount of bird work that you can do to help the science of ornithology and gain a reputation for yourself.

There are hundreds of facts regarding the distribution of birds, their habits, etc., which are still unknown, and you should make it your aim to become an authority on the birds of your region, and keep records of all your observations as to migration, habits, abundance, etc. You will find ample opportunity for work, as every year will bring to light new facts, and the more you contribute to our knowledge of the birds the more you will see what an insignificant matter the formation of an egg collection is in comparison with real ornithology.

In the case of birds, it is justifiable to shoot specimens which are new to you for purposes of identification, but you should make the best use of the bird *before* you kill it, so that it will not be necessary to shoot more of the same kind in order to tell what they are. Your aim should be to learn to recognize birds at sight and by their notes, and you will find you will learn more of value by a study of the living bird than by collecting skins.

The exact knowledge that we now possess of the coloration, etc., of North American birds, and the large collections available for study in the museums, render it entirely unnecessary for *every* bird student to form a collection. Those who undertake any special line of study will soon learn what specimens are required and collect accordingly, instead of amassing a large number of specimens with no particular object in view.

These suggestions are not made with a faultfinding or sentimental feeling, but in a friendly spirit, for the purpose of counteracting the effect of the advice of egg dealers and traders, who seem bent upon developing our budding students into "egg hogs" instead of ornithologists.

We have all killed birds and collected eggs, but not to a useless excess, and have always, we believe, made real use of our collections in adding to the knowledge of birds and advancing the science of ornithology.

As active members of the American Ornithologists' Union, we are only too glad to encourage the study of birds and aid the beginner, but unless some steps be taken against this useless egg collecting, the extermination of some at least of our birds will soon be effected.

We ask your earnest consideration of these points, and trust you will aid us by your influence and example in advancing true ornithology, and in discouraging the waste of bird-life occasioned by this "fad" of egg collecting.

WITMER STONE,

Conservator Ornithological Section, Acad. Nat. Sci., Philadelphia.

J. A. ALLEN,

Curator Dept. Vertebrate Zool., Amer. Mus. Nat. Hist., New York City

FRANK M. CHAPMAN,

Ass't Curator Dept. Vertebrate Zool., Amer. Mus. Nat. Hist., New York City.

ROBERT RIDGWAY,

President American Ornithologists' Union.

Curator Dept. of Birds, U. S. Nat. Mus., Washington, D. C.

CHARLES W. RICHMOND,

Ass't Curator Dept. of Birds, U. S. Nat. Mus., Washington, D. C.

C. HART MERRIAM,

Chief U. S. Biol. Survey, Dept. of Agriculture, Washington, D. C.

T. S. PALMER,

Ass't Biol. Survey, Dept. of Agriculture, Washington, D. C.

A. K. FISHER,

Ass't Biol. Survey, Dept. of Agriculture, Washington, D. C.

WILLIAM BREWSTER,

Curator Dept. of Birds, Museum Comp. Zool., Cambridge, Mass.

WILLIAM DUTCHER,

Treasurer American Ornithologists' Union, New York City.

JOHN H. SAGE,

Secretary American Ornithologists' Union, Portland, Conn.

Fall Migration at Portland, Conn.

BY JOHN H. SAGE

I. AVERAGE DATES OF DEPARTURE OF THE COMMONER SUMMER RESIDENT BIRDS

SEPTEMBER 1 TO 10

Least Bittern, Black-billed Cuckoo, Least Flycatcher, Baltimore Oriole, Veery

SEPTEMBER 10 TO 20

Kingbird, Cliff Swallow, Purple Martin, Warbling Vireo, White-eyed Vireo, Prairie Warbler, Wood Thrush.

SEPTEMBER 20 TO 30

Spotted Sandpiper, Whip-poor-will, Humming-bird, Rose-breasted Grosbeak, Bank Swallow, Yellow-throated Vireo, Nashville Warbler, Yellow Warbler, Redstart, Ovenbird, House Wren.

OCTOBER 1 TO 10

Green Heron, Nighthawk, Chimney Swift, Wood Pewee, Scarlet Tanager, Red-eyed Vireo, Black and White Warbler, Parula Warbler.

OCTOBER 10 TO 20

Virginia Rail, Black-crowned Night Heron, Cooper's Hawk, Yellow-billed Cuckoo, Phebe, Bobolink, Indigo Bunting, Barn Swallow, Catbird, Brown Thrasher, Short-billed Marsh Wren.

OCTOBER 20 TO 31

American Bittern, Sharp-shinned Hawk, Red-winged Blackbird, Meadow Lark, Field Sparrow, Vesper, Savanna and Chipping Sparrows, Towhee, Tree Swallow, Black-throated Green Warbler, Maryland Yellow-throat, Long-billed Marsh Wren.

NOVEMBER 1 TO 30

Woodcock, Mourning Dove, Marsh Hawk, Kingfisher, Flicker, Bronzed Grackle, Cowbird, Song Sparrow, Swamp Sparrow, Robin.

II. DATES OF ARRIVAL OF MIGRANTS FROM THE NORTH

AUGUST 15 TO 31

Great Blue Heron, Small-billed Water Thrush.

SEPTEMBER 1 TO 10

Yellow Rail, Least Sandpiper, Solitary Sandpiper, Osprey, Blackburnian Warbler, Yellow Palm Warbler, Canadian Warbler*.

SEPTEMBER 10 TO 20

Pied-billed Grebe, Blue-winged Teal, Wilson's Snipe, Pigeon Hawk, Yellow-bellied Sapsucker, Rusty Blackbird, White-throated Sparrow, Philadelphia Vireo, Bay-breasted Warbler, Black-poll Warbler, Connecticut Warbler, Red-breasted Nuthatch, Grey-cheeked Thrush.

SEPTEMBER 20 TO 30

Loon, Black Duck, American Coot, Pectoral Sandpiper, Semi-palmated Sandpiper, Greater Yellow-legs, Nelson's Sparrow, Junco, Lincoln's Sparrow, Black-throated Blue Warbler*, Myrtle Warbler, Magnolia Warbler*, Pine Warbler, Wilson's Warbler*, American Pipit, Winter Wren, Ruby-crowned Kinglet, Olive-backed Thrush.

OCTOBER 1 TO 10

Green-winged Teal, Pintail, American Scoter, White-winged Scoter, Short-eared Owl, White-crowned Sparrow, Blue-headed Vireo, Brown Creeper, Golden-crowned Kinglet, Hermit Thrush.

OCTOBER 10 TO 20

Red-throated Loon, American Scaup Duck, Old-squaw, Surf Scoter, Ruddy Duck, Canada Goose, American Golden Plover, American Goshawk, Fox Sparrow.

OCTOBER 20 TO 31

Hooded Merganser, Baldpate, Lesser Scaup Duck, Ring-necked Duck, Buffle-head, Snowflake, Tree Sparrow, Northern Shrike.

NOVEMBER 1 TO 20

Red-breasted Merganser, Mallard, Snowy Owl, Pine Siskin.

*Generally noted at Englewood, N. J., between August 20 and 31.—F. M. C.

For Young Observers

Mr. Flicker Writes a Letter

BY GARRETT NEWKIRK

People:

Tell me where you scare up
Names for me like 'Flicker,' 'Yarup,'
'High-hole,' 'Yucker,' 'Yellow-hammer'—
None of these are in my grammar—
'Piquebois jaune,' (Woodpick yellow),
So the Creoles name a fellow.
Others call me 'Golden-wings,'
'Clape,' and twenty other things
That I never half remember,
Any summer till September.



Many names and frequent mention
Show that I receive attention,
And the honor that is due me;
But if you would interview me
Call me any name you please,
I'm 'at home' among the trees.
Yet I never cease my labors
To receive my nearest neighbors,
And 'twill be your best enjoyment
Just to view me at employment.

I'm the friend of every sower,
Useful to the orchard grower,
Helping many a plant and tree
From its enemies to free,—
They are always food for me.
And I like dessert in reason,
Just a bit of fruit in season,
But my *delicacy* is *ants*,
Stump or hill inhabitants;
Thrusting in my sticky tongue,
So I take them, old and young.



Surely we have found the best
Place wherein to make our nest—
Tunnel bored within a tree,
Smooth and clean as it can be,
Smallest at the open door,
Curving wider toward the floor.
Every year we make a new one,
Freshly bore another true one;
Other birds, you understand,
Use our old ones, second-hand,—
Occupying free of rent,
They are very well content.



To my wife I quite defer,
I am most polite to her,
Bowing while I say, 'kee-cher.'
Eggs we number five to nine,
Pearly white with finish fine.
On our nest we sit by turns,
So each one a living earns;
Though I think I sit the better,
When she wishes to, I let 'er!

— *Flicker.*

Zip and Phoebe (A Cat-Bird Story)

BY FLORENCE A. VAN SANT



EARLY each spring I watch for the return of a Phœbe bird, which usually gladdens my heart by his appearance about sundown of some bright day. He is alone, because, according to most authorities, he travels in advance of his mate; and when I ask with wonder, "Well Peter, where is Phœbe?" with a quick dip of his tail and an expressive twitter, he seems to say, "She will arrive on the next train."

For several years they have returned to the same nest beneath the roof of my veranda, each spring re-lining the inside and brightening the outside with green moss. They always raise two broods. They are very tame, and from year to year do not seem to forget their confidence of the previous summer, and will perch on the cedar tree close to the porch, or light on the rope of the hammock only a few feet away from me.

I have so trained my cat, Zip, that she thinks it is as wicked to look at a bird as she does to climb on the table, and never does either. Peter and Phœbe seemed to know that they had nothing to fear



'ZIP'

from her; and, when sitting on the little white eggs, their bright eyes would peep over the nest at Zip, sitting or napping in the easy chair below. When the young birds arrived, the parents would fly back and forth feeding them, without showing any more fear of the cat than they did of me.

While busy in the house one day, my attention was attracted by a loud tapping at the window, and on looking up I saw Phœbe apparently in great distress. She would fly at the window, striking the glass with her bill, circle round, fly back again, and tap, as though trying to attract my attention. Upon my appearance at the door, she flew toward the nest and, pausing on the wing, as a Kingfisher will poise over the water when seeing a fish, uttered sharp cries, fluttering her wings all the while, and telling me in bird language of her trouble. There sat a cat on the chair just below the nest, but it was not Zip. She had taken no other cat into her confidence, hence her alarm. When I drove the strange cat away, she quieted down and administered to the wants of her family as usual.

This little incident seems to show that birds become so accustomed to their environments that they know each member of the family, even to the dog and cat, and that they possess a certain degree of reasoning power.

One day later in the season, when they were raising the second family, my attention was again attracted by the same cries. A pair of my tame Pigeons, looking for a place to build, had lighted on the cornice over the door not far from the nest, and both Peter and Phœbe were trying to drive them away. They would dart almost up to them, all the while snapping their bills vigorously, as though catching a succession of insects, but before the Pigeons could strike with their wings, would dart away, and like a flash be back again. They did not seem to be calling on me for assistance, but were themselves fighting for what they considered their rights, and evidently did not think Pigeons "as harmless as Doves." The warfare continued at intervals for several days, until the Pigeons decided it was an unpleasant locality for a future home, and retired to the barn.



Notes from Field and Study

Birds Through a Telescope

The season is approaching when the migration of birds may be studied to advantage through a telescope. A 2-inch hand glass may be used, though a higher power is preferable. It should be focused on the moon, across the surface of which the bird is seen passing.

September 3, 1887, at Tenafly, N. J., Mr. John Tatlock, Jr., and myself, using a 6½-inch equatorial, saw 262 birds cross the moon's disc between the hours of eight and eleven (*The Auk*, V, p. 37), and we have since repeated the observation.

Studies of this nature should throw much light on the question of 'highways of migration,' and at the same time furnish an idea of the number of birds passing through a given space during a given time; and, more particularly, they should tell us the height at which birds perform their nocturnal journeys.

Mr. Tatlock and myself solved this latter problem by a hypothetical assumption of the inferior and superior distances at which a bird would be visible. In this way we arrived at the conclusion that the birds seen were between one and three miles above the earth.

Until recently this theory has lacked confirmation, but I now learn from Dr. William R. Brooks, Director of Smith Observatory, at Geneva, N. Y., that during the evening of May 23, 1899, while observing the moon through his 10⅛-inch refracting telescope, using a power of 100 diameters, he saw some forty birds cross the field of vision. Dr. Brooks states that from the distinctness of the image and the fact that from three to five seconds were required by each bird to cross the segment of the moon in the field of the telescope, he estimates the birds to have been distant about seven and a half miles, and further calculation, based on this estimate, places them about two miles above the earth.—FRANK M. CHAPMAN.

The Cardinal in Maine

This incident is vouched for by Mrs. L. M. N. Stevens, National President of the W. C. T. U.

Several years ago, after the first snow-fall at Stroudwater, Maine, Mr. Stevens hurried into the house one morning to ask his wife to come and see a handsome, but cold and hungry-looking, red bird, in a shrub near the door. Mrs. Stevens saw that it was a Cardinal Grosbeak, and, placing some food in a large cage, she set it near the bush. The Cardinal soon hopped inside, and was safely conveyed indoors under cover of a blanket. A happy season began. He was given the freedom of the room, and became very tame and companionable.

In the spring, as soon as the red bird grew restless and the weather mild, he was let loose, and flew away.

In the fall, with the first cold snap, came the Cardinal, to spend his second winter in the old home.

Again in the spring, when the restlessness re-appeared, Mrs. Stevens wanted to let the bird fly, but yielded to the judgment of her husband, who advised delay, lest cold and hunger overtake the little wayfarer. Nature, however, avenged the violation of instinct; in a few days the Cardinal drooped, refused to avail himself of liberty, and died.—ELLA GILBERT IVES, *Dorchester, Mass.*

A Useful Bird

In speaking of the economic value of certain of our birds, a lecturer, quoting Professor Beal, said that in Iowa the Tree Sparrow was estimated to destroy 875 tons of the seeds of noxious weeds annually.

As reported in a local paper, this statement read: "The Tree or Chipping Sparrow destroyed, as discovered by scientific observation, 640,000 tons of the eggs and young of harmful insects."

Book News and Reviews

WILD LIFE AT HOME: HOW TO STUDY AND PHOTOGRAPH IT. By RICHARD KEARTON, F. Z. S. Fully Illustrated by Photographs taken Direct from Nature by C. KEARTON. Cassell & Company, Ltd., London, Paris, New York, and Melbourne, 1898. 12mo., pp. xiv + 188. Numerous half-tones. Price, \$1.50.

In this book, Mr. Kearton and his brother show that their patience and ingenuity, as well as their field of work, are inexhaustible. It differs from 'With Nature and a Camera' chiefly in being addressed more especially to photographers, the opening chapters being devoted to a description of the outfit required, with practical suggestions as to its use. These are followed by chapters on 'Birds,' 'Mammals,' 'Insects,' and the life of 'Pond, River and Seashores.' The illustrations are fully up to the standard of previous work by the same authors, which we have before had occasion to praise so highly, and continued experience with a camera leads us to appreciate more fully than ever the truly marvellous pictures they have secured. Mr. Kearton's paper in this number of *BIRD-LORE* admirably illustrates the practicability of his advice to naturalist-photographers, who, in 'Wild Life at Home' will find both instruction and encouragement. The book should be in every naturalist's library, whether or not he uses a camera.

F. M. C.

BIRDS. By ANNIE M. GRANT. Report of the R. I. Board of Agriculture, 1899.

THE BIRDS OF ONTARIO, IN RELATION TO AGRICULTURE. By CHAS. W. NASH, ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.

In Mrs. Grant's paper we have an epitome of a great amount of useful information. The horticultural and agricultural societies are doing a good work in publishing such papers in their reports, thus ensuring to them a wide circulation among the class who most need this kind of literature.

In that portion of her paper devoted to

the 'Decrease in Bird-life,' Mrs. Grant puts her finger on some very sore spots. There can be no doubt that much harm has been done through egg-collecting by pseudo-naturalists, who make no use of their collections except to boast of their size and rarity, and who gather thousands of extra sets for purposes of exchange. Another element of bird destruction is seen in the South, where our common singing birds are so generally offered for sale in the market as food. A campaign of education is needed here. The time wasted in shooting these useful creatures would, if properly applied, produce more and better meat in the shape of domestic poultry, or other equally palatable food. We hope Mrs. Grant will continue her good work.

In Mr. Nash's paper we have another concise statement of the facts with regard to the usefulness of birds from an agricultural point of view. The case of the birds of prey is very clearly and forcibly presented. When these birds do harm—as when they pick up a stray chicken—the evil is open and apparent to everybody; but the good work they are constantly doing is only appreciated after the most careful and systematic observation. The depredations of the vast hordes of small mammals is a constant menace to the interests of husbandry, and more especially to horticulture. Without question, the Hawks and Owls are the most efficient checks upon the increase of these creatures, and it cannot be too often or too forcibly impressed upon the farmers that these birds should be rigorously protected.

With regard to the other birds, the case is equally well put, and illustrated by many interesting and valuable observations and experiments. There can be no question that this is a valuable paper, and that it deserves a wide circulation among agricultural people.

As to the merits of the illustrations

with which it is embellished, there may be differences of opinion.— F. E. L. BEAL.

ON THE BIRDS' HIGHWAY. By REGINALD HEBER HOWE, Jr. With Photographic Illustrations by the Author, and a Frontispiece in color from a Painting by LOUIS AGASSIZ FUERTES.

This is a contribution to the class of literature which John Burroughs and Bradford Torrey have made so deservedly popular. It cannot, however, be said that the author has reached the standard of his prototypes. His observations were made in the Atlantic states from Virginia to Maine, and his descriptions bear evidence of sympathy with his subject. The illustrations include an admirable frontispiece of Chickadees by Louis Fuertes, thirteen full-page half-tones, for the most part illustrating the localities described, and numerous half-tone 'thumb-nail pictures' in the text, largely taken from mounted birds. Some of the latter are effective; others are too small or too indistinct to be of value to those who would need them.

An appendix gives nominal lists of the birds observed at Bristol, R. I.; Washington, D. C.; Chevy Chase, Md.; Hubbardstown, Mass., and Chateaugay Lake, N. Y.— F. M. C.

THE DANGER OF INTRODUCING NOXIOUS ANIMALS AND BIRDS. By T. S. PALMER. Yearbook of the Department of Agriculture for 1898, pp., 87-110; 1 half-tone plate and 6 cuts in the text.

BIRDS AS WEED DESTROYERS. By SYLVESTER D. JUDD. Yearbook of the Department of Agriculture for 1898, pp., 221-232; 1 half-tone plate and 7 cuts in the text.

ECONOMIC RELATIONS OF BIRDS AND THEIR FOOD. By F. E. L. BEAL. Reprinted from the Proceedings of the Twenty-fourth Annual Meeting of the New Jersey State Horticultural Society, January 4 and 5, 1899

As long as man's attitude toward nature is the standpoint of dollars and cents, bird-lovers will welcome every fact which places them in possession of a fresh argument to be used where appeals to sentiment are of no avail. It is, therefore, with great satisfaction that we receive these

sound, convincing papers on economic zoölogy.

Dr. Palmer's paper has long been needed and, fortunately or unfortunately, so unanswerable are the facts which he presents, that one would imagine universal knowledge of them would be all that was necessary to avert further danger from the introduction of exotic species. The subject, however, should receive the prompt attention of legislators, in order that it may be duly placed under the control of the proper authorities—obviously the officials of the Biologic Survey of the United States Department of Agriculture.

In giving us the results of his studies of the food of certain seed-eating birds, Dr Judd at the same time places their economic importance so far beyond dispute that we trust every agriculturist in the land may become familiar with his facts and figures. None of the many valuable papers issued by the Biological Survey has had a more obvious value than this one.

In his lecture before the New Jersey Horticultural Society, Professor Beal discusses unprejudicedly birds' power for good or evil. He shows that while insects, especially certain noxious species, have greatly increased since the settlement of this country, birds have decreased, and that in order to restore the balance disturbed by man, an increase in the number of our birds is greatly to be desired.— F. M. C.

Book News

EVERY lover of animals must rejoice in the phenomenal success achieved by Ernest Seton Thompson's 'Wild Animals I have Known.' Although published only last October, over 14,000 copies have been sold, and the book's popularity increases as its charm becomes more widely known. Mr. Thompson has done more to bridge the gap between human life and animal life than any writer we have known. One has only to read his work to become convinced of one's kinship with the lower forms of life.

Bird-Lore

A Bi-monthly Magazine

Devoted to the Study and Protection of Birds

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

Published by THE MACMILLAN COMPANY

Vol. 1 AUGUST, 1899 No. 4

SUBSCRIPTION RATES.

Price in the United States, Canada, and Mexico, twenty cents a number, one dollar a year, postage paid.

Subscriptions may be sent to the Publishers, at Englewood, New Jersey, or 66 Fifth avenue, New York City.

Price in all countries in the International Postal Union, twenty-five cents a number, one dollar and a quarter a year, postage paid. Foreign agents, MACMILLAN AND COMPANY, LTD., London.

Manuscripts for publication, books, etc., for review, should be sent to the Editor at Englewood, New Jersey.

Advertisements should be sent to the Publishers at Englewood, New Jersey, or 66 Fifth avenue, New York City.

COPYRIGHTED, 1899, BY FRANK M. CHAPMAN.

Bird-Lore's Motto:

A Bird in the Bush is Worth Two in the Hand.

THE advice of a prominent ornithologist to beginners to collect all the birds of a species they can get, has so long misrepresented the necessities of the case and, at the same time, brought legitimate collecting into disrepute, that every one having the interests of the science of ornithology at heart will read with great satisfaction the circular entitled 'Hints to Young Bird Students' which we reprint on another page. Signed by a majority of the professional ornithologists of this country, representing the institutions where ornithology is most actively studied, it may be accepted beyond thought of dispute as representing the true attitude of scientific ornithologists toward the question of collecting. And in place of the advice to kill all the birds "you can get," what do we find? Virtually a plea to abstain from all egg-collecting, to take birds only for purposes of identification, and a statement that the student "will learn more of value by a study of the living bird than by collecting skins."

To our mind, the importance of this

circular cannot be over-rated. It marks an epoch in the history of North American ornithology. The future ornithologist is not to be a mere hoarder of birds' skins, but a student of bird-life whose researches, we predict, will prove an invaluable aid in the solution of that most difficult and most important of all biologic problems, the relation of animals to their environment.

THE paper by Mrs. Olive Thorne Miller on 'The Ethics of Caging Birds,' published in the last number of BIRD-LORE, has been both commended and condemned. Some correspondents have considered it a most rational and unprejudiced treatment of the subject, others have written that as its general tenor might encourage the caging of birds, it was not to be endorsed. Particularly do they deplore what Mrs. Miller feels to be "a work of charity,"—the rescuing of birds "from the discomforts of a bird-store" for, they say, that the dealer replaces the sold bird with another, and the final result is to encourage the trade in birds. Of this there can be no doubt, and the question, therefore, becomes one for debate, as to whether the pleasure to be derived from the companionship of a caged bird, the humanizing influence which may be exerted by association with a creature dependent on us, and the knowledge we may acquire of its habits, justify us in depriving it of its liberty—assuming, of course, that it receives proper care. We shall be glad to receive the opinions of our readers on this subject.

'The Century' for July has an illustrated article on Bird Rock, in the Gulf of St. Lawrence, by the Editor of this journal, which, it should be said, would have appeared in BIRD-LORE had it not been disposed of before this magazine was established. This statement will also apply to an article on Pelican Island, Florida, which will appear in 'St. Nicholas' for September.

DR. COUES having retired from the Editorship of 'The Osprey,' Dr. Gill, who had withdrawn his name from recent numbers, assumes control.

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 (President of the Audubon Society of the State of Connecticut), Fairfield, Conn., to whom all communications relating to the work of the Audubon and other Bird Protective Societies should be addressed.

DIRECTORY OF STATE AUDUBON SOCIETIES

With names and addresses of their Secretaries.

New Hampshire.....	MRS. F. W. BATCHELDER, Manchester.
Massachusetts.....	MISS HARRIET E. RICHARDS, care Boston Society of Natural History, Boston.
Rhode Island.....	MRS. H. T. GRANT, JR., 187 Bowen street, Providence.
Connecticut.....	MRS. WILLIAM BROWN GLOVER, Fairfield.
New York.....	MISS EMMA H. LOCKWOOD, 243 West Seventy-fifth street, New York City.
New Jersey.....	MISS ANNA HAVILAND, 53 Sandford Ave., Plainfield, N. J.
Pennsylvania.....	MRS. EDWARD ROBINS, 114 South Twenty-first street, Philadelphia.
District of Columbia.....	MRS. JOHN DEWHURST PATTEN, 3033 P street, Washington.
Wheeling, W. Va. (branch of Penn. Society),	ELIZABETH I. CUMMINS, 1314 Chapline street, Wheeling.
Ohio.....	MISS CLARA RUSSELL, 903 Paradrone street, Cincinnati.
Indiana.....	AMOS W. BUTLER, State House, Indianapolis.
Illinois.....	MISS MARY DRUMMOND, Wheaton.
Iowa.....	MISS NELLIE S. BOARD, Keokuk.
Wisconsin.....	MRS. GEORGE W. PECKHAM, 646 Marshall street, Milwaukee.
Minnesota.....	MRS. J. P. ELMER, 314 West Third street, St. Paul.
Tennessee.....	Mrs. C. C. CONNER, Ripley.
Texas.....	MISS CECILE SEIXAS, 2008 Thirty-ninth street, Galveston.
California.....	MRS. GEORGE S. GAY, Redlands.

The Responsibility of the Audubon Society

Now that the Audubon Society is recognized as a factor in the higher civilization of the day, it may be well to ask how far it realizes its responsibility as a public educator.

"For the Protection of Birds," is a most reasonable and tangible declaration of motive, but what next?

The male and female public is straightway asked to give up certain habits that it has regarded as inherent rights,—in the cause of humanity and agricultural economy.

So far so good; but should not these would-be teachers of good will to animals, themselves be educated in consistent humanity, in order to keep their doctrines above the ridicule level?

Upon the discrimination of its humanity depends the future of the Audubon Society. A discrimination that shall render its workings logical, and make it able to see that it must at least give as much as it takes. A breadth of knowledge to realize that if the Society restricts

the hat trimmings of women, the egg-collecting habits of boys, and the "just to see if I can hit it" proclivities of both boys and men, it is bound to give them something beside "the consciousness of rectitude" in return. The very least it can do is to help them to become as intimately acquainted with "the bird in the bush" as they were with the egg in the pocket and the feather on the hat.

It is here that the educational responsibility of the Audubon Society lies. Instead of issuing tracts simply to decry feather-wearing, and to say that something should be done, I would have each Society send out one or more illustrated bird lectures to the remoter corners of its range, where people do not have the privilege of hearing professional ornithologists. Also to the groups of remote country schools whose scholars have no "key to the fields" that lie so close at hand. I would have the Societies send small circulating libraries of bird books in the same way. To introduce people to the bird in the bush is the way to create a public sentiment to keep it there, and to

make it possible to obtain legislative authority for the enactment and keeping of good bird laws, which are the backbone of protection.

Again, there should be no sort of conflict between ultra bird protectionists and legitimate scientific ornithology. That many of the best known ornithologists occupying public positions in the United States favor the restriction of egg-collecting, etc., is amply proved by a leaflet issued in May, by Witmer Stone,* called "Hints to Young Bird Students," and signed by such men as J. A. Allen, Robert Ridgway, C. Hart Merriam, A. K. Fisher, Wm. Brewster, F. M. Chapman, John H. Sage, C. W. Richmond, T. S. Palmer, and Wm. Dutcher.

The Audubon Societies are responsible for meeting these liberal-minded and progressive scientists half way. There must be anatomists and embryologists to study the human body, why not then, also, of the feathered brotherhood, *only* it is not necessary for mankind in general to keep skeletons of either birds or people in their closets for this purpose, and the random collecting of either should be regarded as equally reprehensible.

I would see humanity and science allied in this matter. If the Audubon Societies confess that this is impossible, they are taking the responsibility of harnessing humanity with ignorance,—a horse that will drag any companion into the ditch.

Let "For the Protection of Birds" be the banner motto under which the Audubon Society shall go out, as it is bound, to teach (not to preach) the 'bird in the bush,' but the teaching need be none the less humane, and will be far more effectual if, instead of 'dicky-bird' platitudes of uncertain sex and species, it deals out good, sound, popular ornithology

M. O. W.

The So-called Sparrow War in Boston

In the month of March, 1898, a committee organized by the American Society of Bird Restorers presented to the Mayor of Boston in person the following petition,

signed by a host of representative Bostonians:

"To Hon. Josiah Quincy, Mayor of Boston.

"The undersigned petitioners hereby respectfully represent that the presence in Boston of hosts of the noxious imported Finch, known as the English Sparrow, has come to be a public nuisance, general expense and serious esthetic injury, imperatively calling for prompt municipal abatement.

"Your petitioners would, therefore, most earnestly request that, as the Chief Executive Officer of the city, you direct the immediate reduction and suppression of this pest in such places (instancing the Common and, conditionally, the cemeteries of Boston) as may now be under, or may with this purpose in view be brought under, municipal control."

Under the law of 1890, the Mayor proceeded at once to take such measures as seemed advisable for clearing the Common, Public Garden, and city squares, of the Sparrow pest.

The work was done under the general oversight of the Committee on the English Sparrow, of which Mr. Fletcher Osgood, manager and organizer of the Bird Restorers, was and is the chairman. Five men, with Foreman Kennedy, proceeded to clear English Sparrow nests from the Common, by removing them from orifices in the trees, from openings in the Sanitary Building, and from electric hoods. The nest-boxes, put up years ago by misguided persons to accommodate the English Sparrow were all removed, and the Sanitary Building on the Public Garden was cleared.

In the progress of this work, thousands of small orifices in the trees of the Common (all known to exist) were cleared out and effectively closed with wooden stoppers, and much dead wood, inviting the breeding of the Sparrow, was removed. As a whole, great good in the way of arresting decay and generally improving the trees of the Common was done by Foreman Kennedy and his force, even if we leave out of account the checking of the breeding of the Sparrow. The work began on March 15, and ended April 5. During that period about 5,000

*See page 125 of this number of BIRD-LORE.

nests and 1,000 eggs were destroyed. No young birds were found. The protest against the work, based mainly on sentimental grounds, which Mr. Angell, of the S. P. C. A., put forth, resulted in two picturesque hearings at the City Hall. An account of these hearings, with some of their informal adjuncts, would certainly entertain and instruct the readers of BIRD-LORE were it possible to embody it here.

Let it suffice to say, that the weight of common sense, of real humanity, and of economics, as well as of science in overwhelming measure, was, in the judgment of the best informed, wholly with those who would reduce the Sparrow. The Mayor, however, decided to suspend the work, assigning as a reason the difficulty and expense of continuing it. The committee sent to the Mayor a letter expressing its regret that the work should thus be brought to an untimely close, and fully outlining plans for its continuance. At the present writing, no definite prospect is in sight of the resumption of the work. The committee proposed, after the closure of the nesting orifices, to pull down by means of hooked poles such nests as were built by the Sparrows in the branches of the trees on the Common and Garden, timing visits so as to destroy nests and eggs only, thus preventing the hatching of young. With the onset of cold weather it was proposed to trap and destroy the Sparrow by devices which were already proved at once efficient and merciful. These two methods, aided, perhaps, by others, carefully planned to avoid cruelty, were the ones much relied on by the committee to do the needed work of clearance.

After the stoppage of the work the Mayor wrote to Chairman Osgood, asking his opinion as to the advisability of putting up bird-houses on the Common, so built, without perches, as to keep out the Sparrow and admit the White-bellied Swallow, Bluebird and House Wren. Mr. Osgood replied in effect that perchless bird-houses, judging from recent evidence, would probably invite and shelter the breeding of the Sparrow, and, with the Common still

uncleared, would hardly aid in restoring any native bird. He was willing, under certain strict conditions, that the experiment should be tried purely as an experiment, provided that every box should be instantly removed upon proof that these perchless devices sheltered the Sparrow. He, however, expressed little hope that any good would come of such a measure beyond the absolute demonstration, once for all, and publicly, that perchless boxes were not Sparrow-proof. The "Sparrow committee" could not advise the putting up of bird-boxes under existing circumstances, and if any are erected the responsibility for the trial will not rest in any way with this committee. At this writing, the Sparrows shut out from the tree orifices are building to some extent in the branches of the trees upon the Common. To note how extensively this breeding is carried on this season, and to attain general information as to the presence of any native birds upon the Common and Garden, a patrol of the Boston Branch of the American Society of Bird Restorers has been assigned to observation work through the spring and summer.

Results will be officially reported to the National Biological Survey (U. S. Department of Agriculture) at Washington, D. C.

FLETCHER OSGOOD,
Organizer and Manager of the American Society
of Bird Restorers.

Reports of Societies

MASSACHUSETTS SOCIETY

In February and March, Mr. Ralph Hoffmann gave a course of eight lectures on birds, under the auspices of the Society. These were well attended, and not only increased the interest in bird study, but informed the public more fully of the work of the Society, and also added materially to the treasury.

March 22nd, the Society held a 'Hat Show' at the Vendome, which was a success. Many of the best milliners exhibited, and it served the purpose of interesting both milliners and public in the work of bird protection. In spite

of bad weather, the room was crowded all day, and many hats were sold. The newspapers reported it with illustrations; the milliners were pleased; and the Audubon Society was talked about with renewed interest.

The Society has purchased the publisher's stock of the Audubon Calendar colored plates, without the Calendar numbers, and are offering them for sale at 25 cents for the set of twelve.

The large sale of the chart is very satisfactory, about 1,200 having been sold since Christmas. Appreciative letters are daily received, and the school teachers especially commend it.

New circulars have been purchased for distribution, from the University of Nebraska and Cornell University; also "A Letter to the Clergy," republished by the Wisconsin Society.

HARRIET E. RICHARDS, *Sec'y.*

CONNECTICUT SOCIETY

The second annual meeting of the society took place on June 1, in the United Church Chapel, New Haven Conn., and was largely attended. It being part of the policy of the Society to hold its public meetings each year in different parts of the state.

The president made a short address, outlining the work for the coming season, which will include: (1) the consideration of a practical method for destroying the English Sparrow, as a bird distinctly injurious to song birds and others having agricultural value; (2) an effort to obtain legislation to stop the spring shooting of shore and water birds; (3) the addition to the societies' equipment of several small libraries of bird books, to be circulated free throughout the state where there are no public libraries, after the manner of the lecture outfits; (4) the addition of an illustrated lecture suitable for small children.

The report of the corresponding secretary-treasurer showed a membership in the various classes of 814; also, receipts of over \$500 during the year, no debts, and a balance in the treasury.

The chairman of the committee on free lectures reported the great success of the undertaking. The two lectures, "Birds about Home," by Mrs. Wright, and "Some Facts about Birds that Concern the Farmer," by Willard G. Van Name, having been out over fifty times since early spring. These lectures, accompanied by sets of colored slides and oil-lanterns, are loaned free to any responsible person within state limits, and the Granges have lately taken them up with results most gratifying to the Society.

A few changes were made in the management at the election of officers. Mrs. H. S. Glover, the first corresponding secretary and treasurer, having resigned, received a hearty vote of thanks for her work, and Mrs. Wm. Brown Glover was elected as general secretary in her stead, Mrs. Howard H. Knapp being elected treasurer.

The event of the meeting was the lecture by Mr. F. M. Chapman, upon Photography as an Aid to Bird Study, all the beautifully colored slides used as illustrations having been photographed from life.

The detailed annual report of the Society's work will be mailed upon application.

HELEN W. GLOVER, *Sec'y.*

TENNESSEE SOCIETY

It is with great satisfaction that we report the organization in the court house at Ripley on May 26, of the Audubon Society of the State of Tennessee. Without the assistance of the southern states, the work of the northern section of the country must necessarily be hampered by the inability to protect the birds in their winter haunts and during the migrations.

It is also gratifying to note the common sense basis upon which the society is founded, the president, having stated in his initial address, that "the society had for its leading object the creation of a public opinion that would secure legislation in the interest of bird protection, that would spare our birds from threatened extinction."

... JUST READY. PRICE, \$1 NET ...

NATURE STUDY FOR GRAMMAR GRADES

A Manual for the Guidance of Pupils below
the High School in the Study of Nature

BY

WILBUR S. JACKMAN, A.B.

Dep't of Natural Science, Chicago Normal School

Author of "Nature Study for the Common Schools," "Nature Study and Related Subjects,"
"Nature Study Record," "Field Work in Nature Study," etc.

REVISED EDITION

In preparing this Manual, it has been the author's aim to propose, within the comprehension of grammar school pupils, a few of the problems which arise in a thoughtful study of nature, and to offer suggestions designed to lead to their solution.

That pupils need some rational and definite directions in nature study, all are generally agreed. But to prepare the outlines and suggestive directions necessary, and to place these within the reach of each pupil, is more than any ordinary teacher has time to do, even granting that she is fully prepared for such work. The utter futility of depending upon oral suggestions during the class hour, when the pupils are supposed to be doing individual work, is easily apparent on a moment's reflection. With a manual of directions in hand, each pupil may be made strictly responsible for a certain amount of work, either in the field or in the laboratory. This removes all occasion for that interruption in his work, which is, otherwise, due to the pupil's attempt to *think* and at the same time *hear* what the teacher says.

"Practical, complete, and, all in all, is the best manual we know to fit the student to do really effective science work in the high school . . . Altogether both teacher and pupils who use this book are to be congratulated, for we are sure that through its use the whole field of nature study will assume new definiteness, practicality and interest."

—*Southern Educational Journal.*

"It is decidedly practical, and will be welcomed by many teachers who wish to respond in an intelligent way to the demand for nature study."

—*Inland Educator.*

PUBLISHED BY

THE MACMILLAN COMPANY, New York.



FOUNDERS OF THE AMERICAN ORNITHOLOGISTS' UNION, 1883.

- | | | | | | | |
|------------------|-----------------------------------|------------------------------|---------------------------|-------------------|----------------------------------|-------------------|
| E. A. Mearns. | T. McIlwrath. | J. B. Holder. | D. G. Elliot. | Chas. Aldrich. | J. M. Wheaton. | A. K. Fisher. |
| Nathan C. Brown. | Robert Ridgway, <i>Vice Pres.</i> | H. W. Henshaw. | S. F. Baird. | Geo. N. Lawrence. | Elliott Coues, <i>Vice Pres.</i> | C. F. Batchelder. |
| R. W. Shufeldt. | C. B. Cory. | C. Hart Merriam, <i>Secy</i> | J. A. Allen, <i>Pres.</i> | William Brewster. | D. W. Prentiss. | H. B. Bailey. |
| | | H. A. Purdie. | M. Chamberlain. | | E. P. Blacknell. | |
| | | | C. E. Bendire. | | | |

Bird = Lore

A BI-MONTHLY MAGAZINE
DEVOTED TO THE STUDY AND PROTECTION OF BIRDS
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. 1


OCTOBER, 1899

No. 5

The American Ornithologists' Union

BY J. A. ALLEN

(First President of the Union)



DURING the sixteen years that have passed since the founding of the American Ornithologists' Union, in August, 1883, the study of North American birds has advanced with constantly accelerated strides. That this progress has been due largely to the founding of the Union is beyond denial, as will become evident from the following brief history of its work and the causes that led to its formation.

In all lines of human endeavor, the union of kindred interests and individual effort toward a common end is the key to success. Before the founding of the American Ornithologists' Union, its nucleus existed in a local organization of bird students in Cambridge, known as the Nuttall Ornithological Club. At first its meetings were informal, and its membership was limited to a few individuals living in the immediate vicinity of Cambridge. Later it became regularly organized as a club, with both resident and corresponding members, the latter embracing most of the leading ornithologists of this country. The papers presented at its meetings were often of permanent value, and were later published in scientific journals. In 1876 these had become sufficiently numerous and important to warrant the club in establishing its own medium of publication, the first number bearing date April, 1876, with the title 'Bulletin of the Nuttall Ornithological Club.' As years passed it served not only as the official organ of the club, but as a medium of communication between American ornithologists at large.

This led to the consideration of the desirability of organizing a national society of ornithologists as a means of bringing the workers

in this field into more intimate association and more thoroughly consolidating their interests. The advantages of such consolidation seemed so evident that a call was issued August 1, 1883, dated Cambridge and Washington, for "a convention of American Ornithologists, to be held in New York city, beginning September 26, 1883." The call was signed by the editor of the 'Nuttall Bulletin' (J. A. Allen), associate editor of the 'Nuttall Bulletin' (Elliott Coues), and the president of the Nuttall Club (William Brewster). The response to the call, sent to forty-eight of the more prominent ornithologists of the United States and Canada, was most cordial; twenty-five expressed their intention to attend the convention, and twenty-one were actually present, including several who came a thousand miles or more to attend the convention. Not only were by-laws adopted and officers duly elected, but, as will be noticed later, important lines of work were laid out and assigned to committees, the principle of coöperation being applied in a broad sense.

The Nuttall Ornithological Club is still an active and widely known organization, although upon the founding of the Union, it generously voted to discontinue its 'Bulletin' and to place its subscription list and good will at the service of the Union, which was already considering the desirability of establishing an official medium of publication. As a result, the 'Nuttall Bulletin' became 'The Auk,' which, in recognition of the generous action of the Nuttall Club, was officially designated as the *second series* of the 'Nuttall Bulletin.'

Between isolated workers in any field, jealousies and misunderstandings arise which personal contact tends to obliterate. Such was the case with our ornithologists for some years prior to the founding of the Union. There were two rival check-lists of North American birds, each perhaps equally authoritative though differing in important details, which led to confusion, and a tendency to array our ornithologists into two somewhat hostile camps. This being recognized as a threatening evil of considerable gravity, one of the first acts of the Union was to appoint a committee on the Classification and Nomenclature of North American Birds, so constituted as to include the most competent authorities on the subject and at the same time safeguard all conflicting interests. The work of this committee long since became a matter of history. It was conducted with the utmost conscientiousness and care; personal interests and personal bias were generously waived, differences of opinion were settled by appeal to facts and the evidence, with a result that agreement was established in respect to all points of nomenclature and other technicalities, and a new impetus given to systematic investigation. Thus,

through the work of this committee alone one of the primary objects in view in founding the Union was most happily accomplished. Not only a new check-list of North American birds was substituted for all previous check-lists, but a new 'Code of Nomenclature' was devised and adopted as the basis for determining the names to be used in the check-list. After more than two years of work by the committee the check-list, with its code of nomenclature, was given to the world in 1886, and became at once the accepted standard of authority with all American writers on North American birds: the 'Code' included important innovations in respect to certain principles of nomenclature, which have since become very generally accepted the world over. It is, therefore, to be regretted that a small faction has recently arisen in the ranks of the Union, that, objecting to certain rules of the 'Code,' is seeking to foment a break in the good feeling and harmony that have marked the last ten or twelve years of the history of American ornithology.

A second purpose of the Union was, as already intimated, to bring into coöperation and into personal acquaintanceship as many as possible of the workers in ornithology. In effecting this, the appointment at the first congress of the Union of a Committee on the Migration of North American Birds proved a most efficient means. This committee, with Dr. C. Hart Merriam at its head, began at once to issue circulars of instruction and schedules for the return of data to all bird observers known to the committee, whether members of the Union or not. Thousands of circulars were thus issued annually, reaching hundreds of earnest bird students who had before been working alone and without contact with the leaders in the science, who were thus not only stimulated and encouraged to fresh endeavor, but were placed in communication with a central bureau ever ready to aid their efforts. In a short time the work of this committee outgrew the financial resources of the Union, and led to the founding of a distinct division of the United States Department of Agriculture, designated the Division of Economic Ornithology and Mammalogy, of which the chairman of this committee was invited to become the official head, and which has since become the United States Biological Survey. The data on the migration and geographical distribution of North American birds gathered by this committee was turned over to this new Division of the Department of Agriculture for collation and publication, and the work of collecting further data was continued on an increased scale by the Chief of the Division of Economic Ornithology and Mammalogy. This has resulted in the accumulation of an immense amount of valuable material, but little of which has as yet been published. In 1888 a preliminary report

on 'Bird Migration in the Mississippi Valley,' prepared by Prof. W. W. Cooke and Mr. Otto Widmann, under the direction of the chief of the division, was published, forming one of the most important contributions to the subject of bird migration that has yet appeared. A second report on 'The Land Birds of the Pacific District,' by Mr. Lyman Belding, was published in 1890, and, though issued by the California Academy of Sciences, was the outcome of the work of this committee. Eventually all of the vast accumulation of data inaugurated by the Union, and later carried on under the auspices of the United States Department of Agriculture, relating not only to the migratory movements of birds but to their distribution, will doubtless be published, with proper map and other graphic illustrations.

To another important committee appointed at the first congress of the Union was delegated the investigation of 'The Status of the European House Sparrow in America.' This committee issued circulars of inquiry, and made an elaborate preliminary report to the Union, which report was later, as in the case of the data accumulated by the Migration Committee, turned over to the Division of Economic Ornithology and Mammalogy of the United States Department of Agriculture. Under Dr. Merriam, the investigation was prosecuted with renewed activity, and a final and authoritative report was issued by the Department of Agriculture in 1889. It is needless to say that this impartially conducted report was strongly condemnatory of this burdensome pest.

At the second congress of the Union it appointed a Committee on Protection of North American Birds, which has been continued to the present time, and has been the guiding influence in this great economic and humanitarian work. It has done much to arouse and enlighten public opinion respecting the enormity of the destruction of birds for millinery purposes, and to guide legislation for the better protection of our birds. It early published two important 'bulletins' on the destruction of birds, and was the origin of the original Audubon Society, whose president, Dr. George Bird Grinnell, was long one of the most active members of this committee; through this society, with chapters throughout the country, the cause of bird protection was for several years immensely aided. Of late it has become practically the advisory committee of the existing Audubon Societies which have recently multiplied so gratifyingly throughout the country, and it publishes in 'The Auk' an annual report summarizing the work of bird protection for the year.

In extending a helping hand to casual and isolated observers, the Union has had a marked influence upon the recent progress of ornithology in America, as shown by the increase in the number of observers

who have become contributors to 'The Auk,' and the constantly increasing number who have allied themselves to the Union by membership therein. The constitution of the Union provides for four classes of members; namely, (1) Active Members, limited to fifty, and to include only those who have distinguished themselves as original investigators in ornithology, and who reside in the United States or Canada; (2) Honorary Members, limited to twenty-five, and consisting of the most eminent of foreign ornithologists; (3) Corresponding Members, limited to one hundred, and consisting mainly also of eminent foreign ornithologists; (4) Associate Members, unrestricted as to number, but limited to residence in the United States or Canada. This class includes not only a large number of experienced field workers, but many college professors, educators, and persons eminent in other scientific fields, but who are not expert ornithologists. It is open to all reputable persons whose interest in ornithology is sufficient to prompt them to seek such a congenial alliance.

At the first congress forty-seven ornithologists were elected to active membership—presumably all of the satisfactory candidates available. Of these forty-seven original members, twenty-four were either present or took a prominent part in the organization of the Union, and are thus termed 'Founders.' (The accompanying photograph is a picture of these founders, made up from separate photographs, it being impracticable for the members to assemble to be photographed as a group.) This has remained about the average number, but, as years have passed, the choice for the few coveted places has become harder and harder each year to fill, through the rapid increase of not only available but desirable candidates; so that attainments that would in the earlier days of the Union have proved ample credentials for admission have now less weight, in the effort to select the best from a large otherwise desirable candidacy. The honor of the position has thus become enhanced through competition of merit. The two foreign classes have remained practically unchanged as regards numbers. But the class of Associate Members has increased from about one hundred in 1886 to nearly six hundred in 1898.

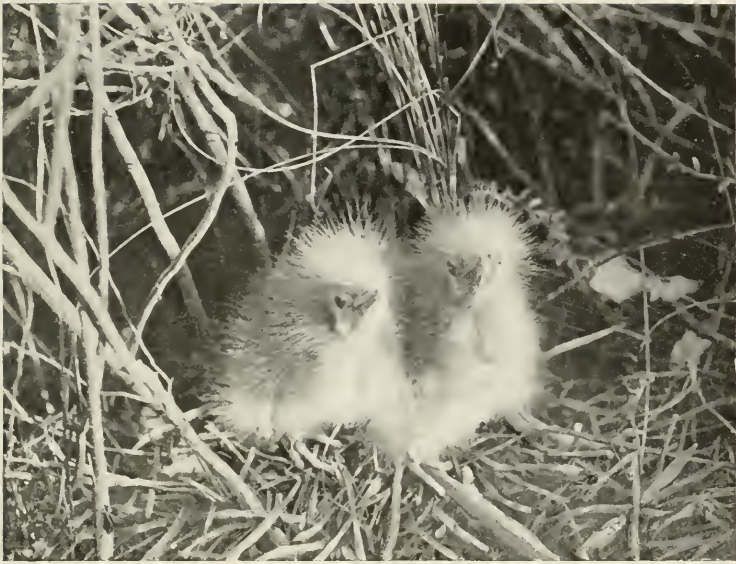
The revenue of the Union is derived entirely from the annual dues from members (\$5 for active members and \$3 for associate members) and subscriptions to 'The Auk.' As the ordinary running expenses of the Union are but a trifle, all of the proceeds from these sources of revenue are devoted to the publications of the Union. These include, besides 'The Auk,' now in its sixteenth volume, the original Code and Check-List of North American Birds (1886), an Abridged Check-List (1889), a separate reprint of the Code alone (1892), the second edition of the Check-List (1895), and nine Supple-

ments to the Check-List (1889-1899), varying in size from about 8 to 36 pages.

'The Auk,' issued quarterly, consists on the average of about 420 pages per year, with at least four fine colored plates, and a greater or less number of text figures, including of late numerous half-tone illustrations of birds in life. As practically all of the funds of the Union are devoted to its publications, and mainly to 'The Auk,' its prosperity as regards its size, the frequency and character of its illustrations, and its influence in promoting the study of ornithology, is limited only by the proceeds from memberships and subscriptions. As it aims to meet the interests and the necessities of both the scientific and the non-scientific reader and contributor, the general articles, comprising more than half of each number, are about equally divided between popular and technical papers, while its department of General Notes (embracing some 15 pages in each number), is about equally acceptable to both classes, as with more or less technical matter for the benefit of the expert are blended notes on the habits and distribution of the lesser known species of our fauna, often of a highly popular character. The department of Recent Literature gives more or less extended notices of the current literature of ornithology, including general works, popular and technical, and of all the principal writings relating to American birds, whether faunal, economic, popular, or technical.

The meetings of the Union occur in November of each year, and heretofore have been held alternately in New York, Washington, and Cambridge or Boston. The present year the meeting, which will be the seventeenth congress of the Union, will be held in Philadelphia, Nov. 13-17, 1899. As usual, the public sessions, beginning on the 14th, will be open to the general public, to which all who are interested in birds are cordially invited.





AMERICAN BITTERNS

Two of a brood of four birds about one week old, at which age they showed no fear of man

Photographed from nature by E. H. Tabor, Meridian, N. Y., May 31, 1898



AMERICAN BITTERNS

The four members of the brood, of which two are shown above, about two weeks old, when they showed marked fear of man

Photographed from nature by F. M. Chapman, Meridian, N. Y., June 8, 1898

The Angler's Reveille

BY HENRY VAN DYKE

What time the rose of dawn is laid across the lips of night,
And all the drowsy little stars have fallen asleep in light ;
'Tis then a wandering wind awakes, and runs from tree to tree,
And borrows words from all the birds to sound the reveille.



This is the carol the Robin throws
Over the edge of the valley ;
Listen how boldly it flows,
Sally on sally :

*Tirra-lirra, down the river,
Laughing water all a-quiver.
Day is near, clear, clear.
Fish are breaking,
Time for waking.
Tup, tup, tup !
Do you hear ? All clear.
Wake up !*

The phantom flood of dreams has ebbed and vanished with the dark,
And like a dove the heart forsakes the prison of the ark ;
Now forth she fares through friendly woods and diamond-fields of dew,
While every voice cries out " Rejoice ! " as if the world were new.



This is the ballad the Bluebird sings,
Unto his mate replying,
Shaking the tune from his wings
While he is flying :

*Surely, surely, surely,
Life is dear
Even here.
Blue above,
You to love,
Purely, purely, purely.*

There's wild azalea on the hill, and roses down the dell,
 And just a spray of lilac still abloom beside the well;
 The columbine adorns the rocks, the laurel buds grow pink,
 Along the stream white arums gleam, and violets bend to drink



This is the song of the Yellowthroat,
 Fluttering gaily beside you;
 Hear how each voluble note
 Offers to guide you:

Which way, sir?
I say, sir,
Let me teach you,
I beseech you!
Are you wishing
Jolly fishing?
This way, sir!
Let me teach you

Oh come, forget your foes and fears, and leave your cares behind,
 And wander forth to try your luck, with cheerful, quiet mind;
 For be your fortune great or small, you'll take what God may give,
 And all the day your heart will say, "'Tis luck enough to live."



This is the song the Brown Thrush flings
 Out of his thicket of roses;
 Hark how it warbles and rings,
 Mark how it closes:

Luck, luck,
What luck?
Good enough for me!
I'm alive, you see.
Sun shining, no repining;
Never borrow idle sorrow;
Drop it! Cover it up!
Hold your cup!
Joy will fill it,
Don't spill it!
Steady, be ready,
Love your luck!

The Prairie Horned Lark

BY ROBERT W. HEGNER

With photographs from nature by the author



At intervals throughout the winter, but more often after the first of February, flocks of hardy little brown birds may be seen about Decorah, Ia., wandering from place to place in search of food. They are the Prairie Horned Larks, harbingers of approaching spring. Some weeks later, when the snow has melted, they seek their favorite haunts in the pasture lands, select a slight elevation from the surrounding surface, and proceed to build their nests. They first dig a hole three inches wide and three inches deep in the softened ground, and then line it on the bottom and sides to the depth of an inch with dry grasses, making a warm nest, level with the surface. I accidentally discovered the first one this season on April 9. It was nicely lined with vegetable down in addition to the usual lining of dry grasses, and was finished ready for the eggs. I returned in a week, but, as the mother bird was not at home, had to content myself with a photograph of the three finely spotted eggs which it then contained. Some children who observed my movements may be held responsible for the destruction of the nest, as



NEST AND EGGS OF HORNED LARK

two days later I could find nothing but the hole from which it had been torn. After a short search another Lark flushed from a nest of three eggs almost identical with the first and about 300 yards from it. Unless incubation is far advanced they seldom flush from

directly under foot, nor do they run along the ground first, after the manner of a great many of the ground builders, but keep a good look out, and fly straight from the nest when anyone comes within fifty feet of them. It is needless to say that it takes sharp eyes to discover their exact position.

At my arrival on the bright, sunny morning of April 24, the Lark was at home, and I had another opportunity of trying to



HORNED LARK AT NEST

photograph her. I focused the camera three feet from the nest and retired to the end of my 60-foot rubber tube. The gophers seemed to be less afraid of me than the Lark, and several of them played together some ten feet away. One little striped rascal began gnawing at the rubber tube, and I was forced to frighten him away. This tube greatly puzzled the Lark, for in running around the camera she always came to a halt upon reaching it, and it was only after repeated trials and much excitement that she screwed up courage enough to hop over. Twenty minutes seemed to be sufficient time to reassure her, and with head lowered she hastened to the nest, looked in, and settled down upon the eggs. An exposure of one twenty-fifth of a second with stop 16 shows her as she was looking into the nest. While I reset my shutter and put in a new plate the Lark left the nest, but this time it took her only two minutes to return. A photograph of a young bird was taken on May 7. The pair of birds that were feeding this young one had already built a second nest, thinner and more loosely put together than the first, and were incubating four eggs.

The enemies of the Prairie Horned Lark seem to be very numer-

ous. The nest and four eggs mentioned above were plowed under to facilitate corn planting, while innumerable nests are destroyed earlier in the season, when the farmers 'break sod.' The first nests in March and April are often subject to great changes of temperature. Although they may be built in warm, sunny weather, a sudden cold wave often covers them with snow and imbeds them in ice.

While waiting for the Lark to become accustomed to the camera, I had an excellent opportunity of observing its song flight. Lying there on my back, I enjoyed a splendid exhibition of one of this bird's peculiar traits. From a point a hundred yards from where I lay a happy songster suddenly arose, flying upward at an angle of 45 degrees, not continuously, but in short stretches. When at a great elevation he began to sing, taking short, quick wing strokes, and singing while he sailed. In this way a circle 300 yards in diameter was crossed and recrossed until fully five minutes had passed, when, suddenly closing his wings, he shot downward like a bullet, slowly catching himself on nearing the ground and curving outward to his starting point. Several similar exhibitions were carried on in exactly the same manner, the time not varying by half a minute. Though the song lacks many of the fine qualities of other birds, it clearly expresses the joy and happiness of the singer. With thrills of pleasure we hear it echo over the hills, and bless the little creature, hoping that in the 'struggle for existence' he may thrive and wax exceeding strong.



SCREECH OWL

Photographed from life by A. L. Princehorn

A Pleasant Acquaintance with a Hummingbird

BY C. F. HODGE

Clark University, Worcester, Mass.



IN the Nature Study course of the Summer School, a little time was devoted to the honey bee, life of the hive, care and management, and especially the work of bees in cross-pollination of flowers and fruits. The closing "laboratory exercise" in the subject consisted in a honey spread, the honey being removed from the glass hive in the window of the laboratory, in the presence of the class, and distributed with hot biscuits and butter, cream and fresh milk. The spread was pronounced the most enjoyable "laboratory work" ever done by members of the class, but to crown the event in the most exquisite way possible, a Hummingbird flew into an open window, and darting, unafraid, in and out among the noisy groups of fifty or more busy people, it rifled the various flowers with which the laboratory was decorated. In closing the windows for the night it was accidentally imprisoned, and on visiting the room next morning (Sunday), I found it still humming about the flowers. Thinking that it might be a female, with nestlings awaiting its return, I gently placed an insect net over it with the intention of passing it out of the window. It proved, however, on closer inspection, to be a young male, so I thought it could do no harm to keep it a day or two for acquaintance sake. No sooner was my finger, with a drop of honey on it, brought within reach, than it thrust its bill and long tongue out through the net and licked up the honey with evident delight. Releasing it from the net, I dropped honey into a number of the flowers, sprinkling water over them at the same time, and it immediately began feasting and drinking. As it flew about it taught me its bright little chirp, evidently a note of delight and satisfaction. When I visited the laboratory again at noon, I took in my hand a few heads of red clover and a nasturtium with its horn filled with honey. On giving the chirp a few times, it flew straight to the flowers in my hand, probed each clover tube, drank its fill from the nasturtium, and, perching contentedly on my finger, wiped its bill, preened its feathers, spread out its tail, scratched its head, and for the space of a minute or two looked me over and made himself the most delightful of tiny friends. The next time I entered the room, about two hours later, he flew to the door to meet me, and this time I took him home, the better to care for him during the afternoon and evening. In the course of the afternoon about a dozen friends called. Each one was provided with a nas-

turtium into which a drop of honey had been placed, and nearly the whole time the little bird was flying from one to the other, perching on fingers or sipping from the flowers held in the hand or button-hole, to the delight of everybody, none of the company having ever seen a live Hummingbird so close by.

In the evening he went to roost high up on a chandelier, and in trying to catch him with the net to put him in a safe cage for the night, he fell like a dead bird to the carpet. I held him warm in my hand, thinking that he was about to breathe his last, but anxious to save the precious little life if possible, I very gently opened the bill and inserted a pellet of crushed spiders' eggs as large as a good-sized sweet pea, following it with a drop of water. He had been feigning, probably, as they are known to do; at any rate, in a minute he was as bright and lively as ever. His room for the



NEST AND EGGS OF HUMMINGBIRD SEEN FROM ABOVE
Situated in an apple tree 8 feet from the ground
Photographed from nature by E. G. Tabor, Meridian, N. Y., June 16, 1897

night was a large insect cage of wire screen filled with convenient twigs and a large bowl of flowers. At five in the morning I fed him honey and young spiders, and again at six. At eight I had a lecture, the subject of which happened to be the taming of wild birds and attracting them about our homes. Removing all flowers from his cage to let his appetite sharpen for the two intervening hours, I set the cage on a table by my side on the lecture platform. I had taken pains to have two fresh nasturtiums in my buttonhole, one well loaded with honey, the other filled with the juices of crushed spiders and spiders' eggs. On reaching the topic of approaching birds in the right way, appealing to them along the lines of their tastes and appetites, appealing to the "right end" of a bird, I had only to open the door, give the familiar chirp, and the little charmer was probing the flowers. Then, as if anxious to show off, he again

perched on my hand and went through his *post prandial* toilet, thus giving the class an idea of bird-taming which no amount of books or anything I might have said could have possibly equaled. Many expressed themselves as never having seen so successful a "demonstration." Some said that I must be in league with higher powers, and it all must have been "providential." This may be true, for anything I know to the contrary. But it may have been simply improving the opportunities of a happy accident; and 'accidents,' we know, "never happen among the Hottentots." If flowers and honey can do it, at any rate, such accidents shall be more frequent about my home in the future.

A Peculiarity of a Caged Skylark

BY H. M. COLLINS



DO birds reverse the usual order of things, and from a serious and stolid youth develop mature playfulness? I have been led to ask myself this question by observing the extraordinary playfulness exhibited by a pet Skylark in extreme old age. Upon hearing the owner of the bird declare, "Dickie has reached his dotage, and, is now in a state of second childhood," it occurred to me that birds have no season of youthful frivolity such as Mother Nature accords to her other children. We are accustomed to associate the idea of youth with playfulness: we picture to ourselves the lamb frisking in the meadows, the frolicsome kitten playing upon the hearth, and we groan inwardly when we meditate upon the destructive propensities of our pet puppies, but we think of our young feathered friends as lying inert in their nests, gaping wide open their yellow-edged beaks incessantly for food, and apparently interested in nothing else.

A caged Skylark is a deplorable object generally, but the Lark of which I am about to write was a bird 'with a history,' and one, whose cage was not a prison but a home. While his native meadow (in Ireland) was being mowed, one of his wings was struck by the mowing-machine and the last joint terribly mutilated. One of the workmen picked up the poor little sufferer and gave him to a little boy whose father was something of a naturalist and a great lover of birds. Examination of the shattered wing revealed the fact that amputation of the last joint would be necessary if the bird's life was to be preserved. The operation was performed, and the little patient was placed in a very large cage carpeted with fresh, green sods. He was well supplied with food and water; the injured wing healed

rapidly: he became surprisingly tame, and soon appeared to enjoy life thoroughly. Occasionally, he was permitted to enjoy his freedom in a large room, but after running about awhile, always seemed glad to return to his cage, the door of which was left open, so that he might go home when he pleased.

He was a beautiful singer, and used to stand in the long grasses and fresh clover of his sod, quiver the poor pinions that could never again soar skyward, and burst into the glorious carol with which he had been wont to salute the sunrise, when, high up among the fleecy clouds, he had appeared an almost invisible speck of personified melody to the enchanted listeners below.

As the years sped by, this much-indulged bird craved petting and attention to an abnormal degree, could be coaxed at any hour into singing, and formed the strange habit of trilling a low, sweet carol at ten o'clock every night, which his mistress called his "good-night song." When he had been caged for twelve or thirteen years he became as playful as a kitten, and was particularly fond of going through what his mistress called the "jungle tiger act," which consisted of crouching down out of sight in the grasses of his sod, and then springing suddenly forward to bite in a gentle way a finger poked between the wires of his cage. He never wearied of this game so long as he could induce a child or grown person to engage in it with him, and before he died, a year or so later, he developed a degree of playfulness that almost amounted to imbecility.

For Teachers and Students

'On the Ethics of Caging Birds.'

[As stated in our last issue, Mrs. Miller's paper on 'The Ethics of Caging Birds,' in BIRD-LORE for June, brought us numerous letters, from which we have selected two, representing both sides of the question, for publication. As a further contribution to this discussion we publish in this number of BIRD-LORE several papers describing experiences with caged birds.—ED.]

TO THE EDITOR OF BIRD-LORE,

Dear Sir:—I have always been such an admirer of Mrs. Miller's writings that I confess to a feeling of great disappointment in her article concerning caged birds, which appeared in your June number of BIRD-LORE. Will you allow me to comment on it briefly?

Mrs. Miller starts out with the position that while she disapproves

with "all her heart" of caging wild birds, yet since "birds are caged we must deal with circumstances as we find them."

Undoubtedly Mrs. Miller is right in sounding a note of warning for those who keep birds as pets, by impressing upon them the care that should be given these utterly helpless little creatures. She says, "Not one bird in a thousand is properly cared for," and she might add to that the fact that thousands die every year of hunger, thirst, lack of care,—forlorn prisoners, utterly unable to help themselves. These facts being true, the inconsistency of her position is that she gives the slightest encouragement to the bird traffic which results in so much cruel suffering. She says that the discomfort they suffer in the bird stores is so great that she feels it to be "a work of charity to purchase them," yet she does not seem to see that every purchaser is in a measure accountable for this suffering. If no one would buy the birds, the traffic would soon cease.

But Mrs. Miller appears to be utterly hopeless as to the cure of this evil, for she says: "If a bird-lover should worry and fret himself to death he could not put an end to their captivity." It is exceedingly fortunate that there have been, and still are, and probably always will be, a few men and women in the world who believe with Emerson that "Nothing is impossible to the man who can will," and who, in spite of the perplexing outlook, go forward, and bring about the world's great reforms.

The first step in repressing any wrong is for some individual to take a firm stand, even in the face of the greatest discouragement. Another will follow, and then another, and by and by, when we have hardly begun to believe anything has been done, a wave sweeps over the country, and the wrong is righted. This, however, can never be brought about unless by individual action and the abiding faith that every one counts.

Mrs. Miller advances as her "strong argument" the great value of caged birds as pets in the education of the child, and upsets her own argument by saying: "Nothing is more important than the training of our youth in humanity, and respect for the rights of others." "Respect for the rights of others" means justice to all the dumb or helpless creation. Even a child can reason out for himself that a bird was created for freedom in the upper air, not for confinement in a cage, and that, even if it is bred in a cage, it is no more just or right to put it to such purposes than it would be to keep a dog chained all day, or a horse tied in a stable all his life, or a man confined within the narrow limits of prison walls.

Children have ample opportunity to be taught kindness, and, what is even better than kindness, justice to the animal creation by having

the care of cats or dogs, yet how few mothers or teachers take pains to teach the right care of these common animals, which are to be found everywhere, and are dependent on man for their happiness. A child will not discriminate between the bird bred in a cage and the bird taken from the mother's nest for the purpose of being brought up in a cage, and while birds are given as pets to children, not only the traffic in canaries is encouraged, but the snaring, or the capturing by other means, of our own song birds will continue. It seems to me there is but one lesson to teach children in relation to birds,—that they were made to be free, and to have space to use the wings that surely cannot have proper exercise even in the confined space of a house.

Let those who already have birds take good care of them, by all means; give them the right food and plenty of fresh water, and as much freedom as possible in the limits of the house; but let those who are true bird-lovers discourage the traffic in birds in every way possible, no matter how hopeless it may seem just now to endeavor to put a stop to it, for the influence of every individual counts.

ANNA HARRIS SMITH.

TO THE EDITOR OF BIRD-LORE.

Dear Sir:—In the main Mrs. Miller's statement of the case is the one that I have come to adopt. In fact, my prejudices against the practice of caging birds were entirely banished and the whole subject revealed in a new light by reading Mrs. Miller's 'Bird Ways.' Such wonderful possibilities of bird happiness, child culture and education, and bird study were opened up by this little book that, from being opposed to caged birds, I was converted to believe that the cage might be made one of the most important factors in the great new field of bird study, and, I hope, actual bird culture, which seems to be dawning before us.

The subject has a number of ethical bearings which Mrs. Miller does not touch upon, two of which I may point out.

First: We may not only have a "right" to confine a bird, but it may become a duty which we owe not only to the bird itself, but to the community as well. The moment before beginning to write this a young Robin was sitting warmly in my hand gulping down earthworms and blackberries. He is now sleeping quietly in a cage by my side. I picked him up this noon on the ground under the nest, unable to fly, and I love to think of him safe and cosy instead of fluttering in the jaws of some miscreant cat. Some days ago a boy came and told me that a neighbor's wife had taken a young Robin away from her cat "and put it on top of the shed" (to fall down into the cat's mouth again). At my request he brought the bird, but

it was so lacerated that it died that night. Of two nests of Robins I have known this season, in spite of me, the cats got seven of the young, and the eighth would have gone the same way were it not sleeping safely in another of my cages. In all, I have three young Robins, all picked up from the ground, unable to fly, all, without the shadow of a doubt, saved from the cats. None have died in my hands, the one killed by the neighbors cat not counted, and they seem to be fairly happy little birds, though it is to be hoped that they will grow happier as they grow wiser. My point is simply that in the present exigency of our rapidly decreasing bird life, every child should learn how to care for fledglings of different species and have suitable cages where they may be kept until, at least, they are able to fly. This may often be done by hanging the cage near the nest, where the parents will feed it. Our children owe this work to the community, to themselves and to the birds. I am aware some will say that this will lead to the death of more fledglings than now go to feed the cats. And under present conditions, I regret to say, there is a good deal of truth in it. In trying to get children interested in this work, I have been surprised to find so many who say, "Oh yes, I would like to have some tame Robins so much; but you can't keep them alive. I have tried it, and they all died." "What did you feed them?" "Oh, bread crumbs;" now and then one will say "worms and berries." "Did they eat?" "No, I never saw them eat anything." "Did you give them any water to drink?" "No, I didn't think of that." "How often do you feed them? Do you know that birds are flying appetites? Did you feed them regularly about every hour?" "No, I put in some stuff generally about once



FEEDING A PET CEDAR WAXWING

Which lives out of doors, all over the house,
and in his cage

Photographed from nature by C. F. Hodge

a day." And so it goes. But shall we be content with this state of things when any bright child can be given the necessary instruction in an hour by which he can succeed in keeping alive and taming practically all the fledglings that fall in his way?

Second: We owe it as a duty to both the birds and ourselves to learn the facts of bird life. We do not adequately know the life story of a single one of our most common species. Every fact that can be discovered as to the good or the harm that birds do *ought* to be found out. Every fact so discovered will act as just so much more motive force to bring about proper relations with our birds. A few birds have been killed, and the stomach contents analyzed, to obtain facts about bird foods which have changed our sentiments and even legislation. Somebody owed this as a duty to both birds and community. But this method is not well adapted for use in elementary schools, and its results might be infinitely extended and the subject of bird foods made a matter of practical public education, by having classes in nature study throughout our schools make feeding tests with tame birds of different species. Cages will have to play at least a temporary role in work of this kind. More than this, a knowledge of bird ways, habits, methods of feeding and caring for their nests and young, their songs and calls, "their manners for the heart's delight," are great æsthetic and educational values. These might all be developed and enhanced by a proper use of caged birds. Instead of collections of stuffed birds, the ethics and educational value of which I wish might be discussed in BIRD-LORE, each city might have, possibly maintained by some ornithological society, a fine collection of pairs of a few of our most valuable species. These could make the rounds of the schools each year. This, too, need only be a temporary expedient, useful until sufficient general interest and knowledge is developed so that we may have, properly appreciated and protected, an abundance of our native birds tamed sufficiently to come close about our homes.

The above are but two points among many, and I bring them forward to bespeak a little intelligent favor for the proper use of the cage. We owe the birds duties of protection and acquaintance, and the cage may help us in the performance of both.

C. F. HODGE, *Clark University.*

For Young Observers

Oliver Twist, Catbird

BY ISABELLA McC. LEMMON



ON July 9, 1898, we caught a young Catbird. He had left the nest the day before, and had then eluded all our efforts, but by morning a pouring rain had removed his objections to captivity, and a very wet, bedraggled little Catbird was established in the big cage. He soon stopped trying to get out, and seemed quite contented—except occasionally when the old birds heard him calling for food and came to the rescue. But that was carefully guarded against, and as his voice lost its baby tone they left him in peace.

A name was quickly given, the frequency and great size of his meals promptly gaining for him the title of 'Oliver Twist.' Worms, currants, goose-, rasp-, black-, and huckleberries, bits of bread soaked in milk, all went down, but the fruit seemed somewhat more acceptable. On July 16, the amount of food was greatest: 43 earth-worms and 81 berries between 7 a. m. and 6.50 p. m.

As the different berries ripened he gave up the early kinds and accepted the new ones most eagerly, elderberries especially. These last he ate by the bunch—indeed one need only walk past a patch of the bushes when the fruit is ripe, to appreciate a Catbird's fondness for them.

By the 16th Oliver had taken his first bath, and for the first time I saw him drink. Four days later, when he must have been about four weeks old, we heard him trying to sing—queer little chirps and gurgles in the lowest of tones, but evidently intended for a song. He stopped as soon as he saw me, raising his wings and begging for food, and for some time we were obliged to enjoy his musical efforts by stealth.

By August 1, he was pretty well feathered; the tail was almost full length, and even the little feathers over the nostrils had started to grow. He was also able to feed himself then, but greatly preferred being fed; often, when I offered him more than he wanted, giving a low 'chuck' very like the old birds' call.

As August progressed worms were refused, and though bread and milk and all sorts of berries were eaten, the bird evidently missed something. He was molting a little—if the loss of so few feathers

could be called a molt—but became more and more droopy, refusing or indifferently eating the various things we tried, till some one gave him a fly! Then all went well; he ate all the flies we could catch, sometimes twenty at a meal, and also wasps and bees. When he saw somebody bringing one of the latter dainties he would jump about in great excitement, then, snatching the insect, kill it with a few quick pinches and swallow it, poison and all. He also learned the motion made in catching a fly, and was on the alert as soon as he saw me snatch for one.

Towards the end of the month I let him out of doors—though he had often been out in the house—and after that he had exercise nearly every day, flying about a little, coming readily to me when I whistled, and generally returning to the cage quickly enough for a few flies. He evidently regarded the cage as home, for let any large bird pass at what he considered too close quarters and in he went like a flash, there to remain till the danger was past. On one occasion, when he was hopping among the plants in the house, I saw him carefully watching a Crow that was fighting his way against a heavy wind. Suddenly the Crow gave way, making a swoop almost to the window, and in far less time than it can be told the Catbird was in the cage and up on a perch, so terrified that it was some minutes before he was himself again.

About the middle of September Oliver Twist caught the migration fever, and when no one was in sight was very uneasy in his cage, not only during the day but at night as well. In the evening the bird was always moved to a dark back hall, where he usually settled down at once: now he was most restless, chucking and mewing sometimes for nearly an hour, and not until late in October did he finally become quiet. Cool days, also, made him more uneasy.

During the fall months Oliver ate every sort of berry I could find, from dogwood to Boston ivy, with two exceptions: those of the wild rose and the catbriar. The seeds of the ivy berries he always ejected, perfectly clean and free from pulp, beginning about half an hour after swallowing them: he would work the bill a little, as if the seed were in his mouth, a moment later pushing it out with the tongue. At first they appeared quite rapidly—two or three or even more in a minute—then more slowly, and continued for at least three-quarters of an hour.

As the house flies disappeared, the big blue and green species, that during the summer were simply scorned, grew quite tempting; but even these gave out, and it became very difficult to find proper food for the little fellow. Figs for a time supplied the place of berries, but he tired of them at last, and bits of meat never passed for

flies or for the worms that even in the greenhouse went down beyond reach of the trowel.

The cage now stood among the plants in a sunny window of the dining-room, and the conversation at meal times generally started Oliver singing; yet it was always a low version of the usual Catbird song, for he invariably sang with the bill nearly closed. Often in the dark December mornings he was scarcely awake when breakfast began, but in a few minutes we would hear his cheerful little song—the first thing in his day—before he even left his night's perch. Then, as the sun touched him there came a great arranging of feathers and a good shake to put each one in place again, and then breakfast.

The bath was almost never omitted from the time the bird was about a month old, and often he bathed twice a day if the first were given him early in the morning; and how he enjoyed it! shuffling up the water with his wings, ducking his head, and spattering in every direction till he was soaked through, then going to the perch and flicking wings and tail and ruffling the feathers until dry.

To some extent Oliver showed affection by coming most readily to me, who generally fed him, and by an odd little greeting he usually gave when I offered him my finger, gently pinching it or giving a slight peck, too mild ever to be mistaken for anger. Unfortunately this was broken up by the teasing of another member of the family, and the pecks became too severe to be altogether agreeable.

He was growing more wild and more unwilling to return to his cage, and I intended to let him go when spring came, but long before that time he got sickly and sluggish, eager for the berries and insects that were not to be found, and in spite of everything I tried in their stead, he died late in December.

But though Oliver Twist lived so short a time he taught me many interesting lessons, one of which, in particular, I shall long remember: never try to keep a fruit- and insect-eating bird through the winter, for no amount of willingness and care can supply him with proper food. Take nature's word for it—she knows quite well what she is about when she sends them all off to the south.



Notes from Field and Study

Birds and Caterpillars

Last year, at Brandon, Vermont, the tent-caterpillars were so abundant as to be a serious injury and annoyance. They lay in close rows, making wide bands on the tree trunks. They spun down from the upper branches and fell upon the unfortunate passers-by. They crawled through the grass in such numbers that it seemed to move in a mass as one looked down upon it. Under these circumstances, birds might be expected to do strange things,—and they did.

The pair of Downy Woodpeckers which lived near us were frequently seen on the ground picking up the crawling tent-caterpillars. They seemed to prefer taking them from the ground to taking them from the trees, though there were more on the tree-trunks than on the ground even. And the Woodpeckers seemed to have no difficulty in moving on the ground, though they moved more slowly than when dodging around a tree.

Two mountain-ash trees on the place were infested by borers, though only slightly and only near the ground, and at the foot of one of these trees the Downy Woodpeckers made many a stand, while they probed the borer-holes with their bills.

The Cuckoos came boldly into the village and fed and fed, flying about quite openly. The Nuthatches flew to a band of caterpillars on a tree-trunk, and were so busy and absorbed in devouring the crawlers that I could put my hand on them before they started to fly, and then they merely flew to another tree close by, and attacked another mass of caterpillars.

Blackbirds waddled over the grass by the sides of the streets picking up the crawlers, and even a Woodcock spent several hours in the garden and on the lawn, *apparently* feasting on tent-caterpillars, but I could not get near enough to be sure.

The Vireos—White-eyed, Red-eyed, and Warbling—the Cat-birds, Cedar-birds, and Rose-breasted Grosbeaks did good service to the trees and human beings, but the most evident destruction was done by the Chipping Sparrows when the moths emerged late in the summer. The moths were very abundant after four o'clock in the afternoon, flying about the trees to lay their eggs, and then the Chippies became fly-catchers for the time, and flew straight, turned, twisted, dodged, and tumbled 'head over heels and heels over head' in the air, just as the course of the hunted moth made necessary. A quick snap of the beak, and four brownish wings would float down like snowflakes, and their numbers on the walks, roads and grass showed how many thousands of moths were slain. In spite of the unwonted exercise the Chippies waxed fat, but not as aldermanic as the Robins, which, earlier, gorged themselves on the caterpillars until, as one observer said, "their little red fronts actually trailed on the ground."—CAROLINE G. SOULE, *Brookline, Mass.*

An Odd Nesting Site.

I have never seen an account of a House Wren taking up his abode in another bird's nest. It seemed, therefore, at first incredible when, early this summer, we saw a Wren frequenting a deserted Baltimore Oriole's nest and apparently start housekeeping in it. This nest was in one of the outermost branches of a large sugar maple about twenty feet from the ground and the same distance from the farm-house, and was completely filled with twigs by its tenants. The little Wren's choice was the more remarkable, in that a number of bird houses had been placed about the grounds for their special accommodation. I believe none of these were occupied, and this pair deliberately preferred the Oriole's nest.—L. H. SCHWAB, *Sharon, Conn.*

Book News and Reviews

THE FIRST BOOK OF BIRDS. By OLIVE THORNE MILLER. With 8 colored and 12 plain plates and 20 figures in the text. Boston and New York, Houghton, Mifflin & Co. 1899. 12mo, pp. viii+149.

Text-books based on successful experiences in teaching generally prove to be of value, and the present volume is no exception to the rule. It contains what its author has found to be the most adequate definition of the bird in her talks on this little-known creature to boys and girls. It is well-named a 'First Book of Birds,' Mrs. Miller's aim being to arouse an intelligent interest in bird-life before confronting the inquirer with 'keys' and discouraging identification puzzles. She, therefore, begins with the nest, and outlines the development of the bird, following this section by chapters on the bird's language, food, migration, intelligence, etc., and concluding with sections on 'How He is Made,' and 'His Relations with Us.' The matter is well chosen, and so admirably arranged that no attentive reader can fail to receive a clear and logical conception of the chief events in a bird's life.—F. M. C.

FIELD KEY TO THE LAND BIRDS. By EDWARD KNOBEL. Boston, Bradlee Whidden. 1899. 16mo, pp. 55, numerous cuts in the text and 10 colored plates.

This is an attempt to make plain the way of the field student, to whom every aid is welcome. One hundred and fifty-five land birds are divided into four groups, according to their size, and are arranged on nine colored plates, in the preparation of which the publishers have evidently struggled with the evils of cheap lithography, or some inexpensive color process. Experience in this direction makes us a lenient critic, and our standard has been reduced from the level of perfection to that of recognizability; that is, if a plate is sufficiently good to unmistakably

represent a certain species, even crudely, we view it solely from a practical standpoint, and admit that it doubtless serves its purpose. Applying this test to the plates under consideration, we are forced to state that, although fairly familiar with the species figured, we are in many cases unable to name the figures.

The text is condensed and to the point, and the pen and ink illustrations liberally scattered through it will be found useful by beginners, to whom the book may be commended.—F. M. C.

OUR COMMON BIRDS. Suggestions for the Study of Their Life and Work. By C. F. HODGE, Ph.D., Clark University, Worcester, Mass. Food-chart and Drawings by Miss HELEN A. BALL. 8vo, pp. 34, 3 half-tones, 8 line cuts in text. 10 cts. per copy, \$6 per 100 copies.

This is a contribution to the pedagogics of ornithology which cannot fail to interest every one desirous of seeing bird studies introduced in our schools. It opens with a chapter on the 'Biology of Our Common Birds,' which shows the importance of becoming acquainted with them, giving, in fact, the reasons which have actuated Professor Hodge in his work in the schools of Worcester.

The nature of this work and the success which has attended it are set forth in the succeeding pages, whose contents are indicated by the sub-titles 'The Bird Census,' 'The Food Chart' (A very useful compilation by Miss Helen A. Ball, showing graphically the food of our commoner birds), 'Bird Study in the School-room,' 'Taming Our Wild Birds and Attracting Them to Our Houses,' and a 'Life Chart of Our Common Birds.' Lack of space prohibits a description of the methods of bird-study given under these headings. Some of the results of their practical application, however, are to be found in the concluding chapter on the 'Ten-to-One Clubs' formed in the Worcester schools, which were joined by

"not less than 5,000 children," who signed the club constitution, which opens by stating that "the object of the club shall be to use every means possible to increase the number of our native wild birds by providing them, when necessary, with food, water, shelter and nesting places."

The pamphlet gives other and equally striking proofs of the enthusiasm with which the children welcomed the opportunity of becoming familiar with birds, and indeed is the most convincing proof of the educational value of bird-study which has come to our attention.—F. M. C.

Book News

WITH its August issue 'Our Animal Friends,' the organ of the American Society for the Prevention of Cruelty to Animals, concludes its twenty-sixth volume. This magazine is edited with a breadth of view which must result in winning many supporters for the cause it represents. In its columns we find no senseless tirades against the inhumanity of partly civilized man, but sane, logical discussions of the rights of animals and the manner in which they may best be secured; of the habits of animals, including many interesting papers on birds,—of animals and their value to man, all of which are calculated to arouse sympathy or interest in them and respect for the journal which so ably champions their welfare.

'WILSON BULLETIN,' No. 26, issued May 30, 1899, has an extremely interesting paper by its editor, Lynds Jones, recording the number of species observed by him on May 8, in Lorain county, Ohio. Work was begun about Oberlin at 3.30 a. m., and continued at 11 a. m. at Lorain on the shore of Lake Erie, resulting, finally, in a record of 112 species identified with the aid of an "Eight Power Bausch & Lomb" field-glass during one day. This number speaks volumes for the observer's activity and the richness of his field; we doubt if it has ever been exceeded in the same period of time in North America.

MR. C. BARLOW publishes in the May-June issue of the Bulletin of the Cooper Ornithological Club, of which he is editor-

in-chief, an eloquent appeal to ornithologists to take only such birds as they may require for their own use, and not to collect birds at all during the nesting season. Particularly does he condemn collecting for profit, saying with equal force and truth, "Every naturalist owes it to science to protect the natural beauties with which the Creator has blessed the earth, and how can the collector, with never a twinge of conscience, quiet the sweet voices of the woodland in a fashion little less than barbarous, for pecuniary gain."

We congratulate Mr. Barlow on the stand he has taken, and we congratulate all bird-lovers on the fact that his declaration of principles adds another journal to the list of those in which the egg-thief cannot boast of his exploits.

THE Chautauqua Literary and Scientific Circle, appreciating the significance of the widespread and constantly increasing interest in birds, has decided to introduce a volume on ornithology into its course of 'Required Reading,' Miss Merriam's 'Birds Through an Opera-glass,' one of the first, as it is one of the best text-books for beginners, having been selected for this purpose. Implying, as it does, the formation of a class of several thousand bird students, this may be considered a step in educational ornithology of unusual importance.

'THE AMERICAN' for August 26, commenting on the 'Hints to Young Bird Students,' published in BIRD LORE for August, says: "This paper deserves the most serious consideration from all. It is well meant, it is timely, it is sensible; the friendly advice it tenders should be accepted and observed."

A WRITER on the slaughter of birds for millinery purposes, in 'The New Illustrated Magazine' for September, whose zeal for the cause of bird protection exceeds his knowledge of ornithology, makes, among others, the remarkable statement that "Florida is now the only country in which Hummingbirds are found, except as rarities." He also gives a unique bit of information in regard to the Toucan, which is said to use its "big beak" to trim its "primary tail-feathers"!

Bird-Lore

A Bi-monthly Magazine

Devoted to the Study and Protection of Birds

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

Published by THE MACMILLAN COMPANY

Vol. 1 OCTOBER, 1899 No. 5

SUBSCRIPTION RATES.

Price in the United States, Canada, and Mexico, twenty cents a number, one dollar a year, postage paid.

Subscriptions may be sent to the Publishers, at Englewood, New Jersey, or 66 Fifth avenue, New York City.

Price in all countries in the International Postal Union, twenty-five cents a number, one dollar and a quarter a year, postage paid. Foreign agents, MACMILLAN AND COMPANY, LTD., London.

Manuscripts for publication, books, etc., for review, should be sent to the Editor at Englewood, New Jersey.

Advertisements should be sent to the Publishers at Englewood, New Jersey, or 66 Fifth avenue, New York City.

COPYRIGHTED, 1899, BY FRANK M. CHAPMAN.

Bird-Lore's Motto:

A Bird in the Bush is Worth Two in the Hand.

At first thought there seemed to be little connection between the 'closet' ornithologist, minutely examining his series of specimens and describing differences which, to the untrained eye, do not exist, and the bird-lover in the fields and woods with heart atune to nature's songsters. But one has only to read Dr. Allen's article on the American Ornithologists' Union in order to appreciate the close relationship existing between scientific and popular ornithology. The organization of the Union brought isolated bird students throughout the country in touch with the leaders in ornithology and, perhaps, for the first time, made them aware that there were successors to Wilson and Audubon.

This result was due largely to the work of the Union's Committee on Migration, which, under the direction of its chairman, Dr. C. Hart Merriam, sent out thousands of circulars calling for observers to supply it with data on migration. Circumstances have thus far permitted the publication of only a small portion of the vast amount of information

secured by this committee, but even if not another word is set in type, it can be said to have created a new era in the history of American ornithology. It asked for assistance, but it gave far more than it received. Its chairman and his superintendents of districts became, as it were, instructors in ornithology, with pupils in nearly every state in the Union and throughout Canada. The value of the advice they gave to students who had been plodding in the dark, prompted only by an innate love of birds, cannot be overestimated, but we believe it to be a demonstrable fact that the popularity of bird-study in this country to-day is due more to the aid and encouragement given students by the members of the American Ornithologists' Union's Committee on Migration than to any other influence.

In connection with the publication of a plate of 'Quills to Avoid,' we would add to Mrs. Wright's plea for the Eagle an appeal for the preservation of the Brown Pelican. The feathers of this bird are now worn so commonly—hundreds may be seen in New York City daily—that every one knowing of the ease with which the bird may be killed and its comparatively restricted range, must feel that at the present rate of destruction its early extinction, at least in the United States, is assured.

From Texas reports come to us of the slaughter of Brown Pelicans in large numbers, and we have also heard rumors that they are being killed for their feathers in Florida. If the residents of the last-named state could be made to realize how infinitely more valuable to them a live Pelican is than a dead one, we do not for a moment doubt that its destroyers would speedily receive their deserts.

This apparently ungainly, but in reality singularly graceful bird is the most picturesque element in the life of Florida's coasts, where its size and familiarity render it conspicuous to the least observing. To the tourist it is as much an object of interest as the alligators or cabbage palms. It is distinctly strange and foreign, and its presence lends a character to the view given by no other bird in Florida. Its loss would, therefore, be irreparable, and we appeal to every lover of Florida to aid in its protection.

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 (President of the Audubon Society of the State of Connecticut), Fairfield, Conn., to whom all communications relating to the work of the Audubon and other Bird Protective Societies should be addressed. 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.

New Hampshire.....	MRS. F. W. BATCHELDER, Manchester.
Massachusetts.....	MISS HARRIET E. RICHARDS, care Boston Society of Natural History, Boston.
Rhode Island.....	MRS. H. T. GRANT, JR., 187 Bowen street, Providence.
Connecticut.....	MRS. WILLIAM BROWN GLOVER, Fairfield.
New York.....	MISS EMMA H. LOCKWOOD, 243 West Seventy-fifth street, New York City.
New Jersey.....	MISS ANNA HAVILAND, 53 Sandford Ave., Plainfield, N. J.
Pennsylvania.....	MRS. EDWARD ROBINS, 114 South Twenty-first street, Philadelphia.
District of Columbia.....	MRS. JOHN DEWHURST PATTEN, 3033 P street, Washington.
Wheeling, W. Va. (branch of Pa. Society).....	ELIZABETH I. CUMMINS, 1314 Chapline street, Wheeling.
Ohio.....	MISS CLARA RUSSELL, 903 Paradrome street, Cincinnati.
Indiana.....	AMOS W. BUTLER, State House, Indianapolis.
Illinois.....	MISS MARY DRUMMOND, Wheaton.
Iowa.....	MISS NELLIE S. BOARD, Keokuk.
Wisconsin.....	MRS. GEORGE W. PECKHAM, 646 Marshall street, Milwaukee.
Minnesota.....	MRS. J. P. ELMER, 314 West Third street, St. Paul.
Tennessee.....	MISS GEORGE S. CONNER, Ripley.
Texas.....	MISS CECILE SEIXAS, 2008 Thirty-ninth street, Galveston.
California.....	MRS. GEORGE S. GAV, Redlands.

Consistency.

Audubonites may be divided into two classes as regards their attitude toward the wearing of feathers,—the moderates and the total abstainers.

The moderates hold that they violate none of the interests of bird protection in its fullest sense by wearing the plumes of game or food birds, or those of the Ostrich, which is as legitimately raised for its feathers as a sheep for its wool. In short, they see the necessity of keeping feather-wearing within conservative bounds, and elect to take the individual responsibility of so doing.

The total abstainers say: "Let us break ourselves altogether of the feather wearing habit. We shall be more conspicuously consistent as bird protectionists, and we shall not be called upon to settle fine points and follow difficult boundaries. We need not know anything about plumage, and never have to decide whether the wings used by milliners are really those of food birds, or the pinions of song birds disguised with dye. Or

if the fearfully manufactured confections are the heads of real Owls and Parrots twisted out of all semblance to nature, or merely compounds of Chicken feathers and celluloid." Both of these attitudes are equally useful to the cause if they are maintained consistently, but inevitably the way of the total abstainers is the easier of the two. The total abstainers need not, to quote Hamlet, "know a hawk from a handsaw." While, in order to be consistent, the moderates must be bird students of no mean intelligence if they would keep safely on the exceedingly narrow pathway that divides the feathers that may be, from those that *must not* be worn, not alone by Audubonites, but by any woman who has either sense or sensibility. A pathway? A slack wire is the better simile, so treacherous is the footing.

What is it that causes the downfall of many of the moderates, who know the common birds fairly well, and could not be hoodwinked into buying Egret's plumes or dyed swallow wings?



QUILLS TO AVOID

1. Inner wing quill of Bald Eagle; length, 10-13 inches; brownish black, more or less white at the base
2. Outer wing quill of Bald Eagle; length, 15-24 inches; black, often whitish or brownish at the base, the broader web of the five outer quills notched, this notch being absent from the remaining quills.
3. Outer wing quill of Brown Pelican; length, 15-17 inches; black, the quill, or midrib, white for about two-thirds its length.
4. Inner wing quill of Brown Pelican; length, about 10 inches; blackish brown, the outer margins, particularly of the narrower web, frosted with silver-gray.

You can guess easily, for you have seen the tempter protruding above and behind the up-to-date outing hat the entire season, and unless you are unusually lucky it has poked you reproachfully in the eye, as if calling your attention to its plight.

"The Quill of course!"

Yes, the Quill is the mischief-maker. At its introduction many years ago, the Quill was at first the harmless feather of a Crow, or a Goose quill sedate enough make a pen for a judge. After awhile it took on dabs of color and even spangles, but all this time it was a good safe outing and rainy day ornament.

Then a change came, the Quill grew suddenly longer with a curl to its tip that made one wonder, if natural, how its original wearer had lived with it. This Quill, however, did not stay well in curl, and less than a year ago it was displaced by the reigning favorite, a Quill as aggressively impertinent as any that decks the cap of the operatic Mephisto, but not half as becoming to the wearer.

Now comes the inconsistency of the moderates. They wear these Quills blindly, because they have not studied birds thoroughly enough to distinguish between plumages except when aided by decided color. The sentence, "It is only a Quill," covers deadly sins of omission. I have cornered several women who are what might be called aggressive Audubonites: "Do you know that the notched Quill in your hat! is a pinion of the American Eagle?" "Oh no, you must be mistaken, it surely is only a Goose, or perhaps a Turkey feather, and besides,"—drawing herself up with superior wisdom, "Eagles are very rare birds, that fly so high it is very difficult to shoot them, and I know at least fifty people who are wearing these Quills."

Rare? yes, pinion of peerless flight! But what bird can fly so high or find so every a resting place as to escape the 'desire of the eye' of fashion? Pause a moment, well-meaning sisters of 'little knowledge.' Hold a Quill class and lay your outing hats on the dissecting table!

Study out the things you have been wearing, and you will be wiser, and I hope sadder also, resolving either to join the total abstainers, or to devote enough time to bird study to be consistent in your actions.

"But," you may say, "We are consistent even now. The Eagle is neither a song bird, an insect eater, nor a game bird, and from an economic standpoint it can only be considered as a bird of prey and an eater of wastage."

Yes, this is all true, and yet, in the higher view of life, the poetic value of things must take rank with the practical. And what bird expresses wild grandeur and poetry of motion in so great a degree as the Eagle? What has Burroughs recently said of it?—"The days on which I see him are not quite the same as the other days. I think my thoughts soar a little higher all the rest of the morning; I have had a visit from a messenger of Jove. The lift or range of those great wings has passed into my thought."

Pegasus harnessed to a plow or 'Cæsar dead and turned to clay,' stopping a hole 'to keep the wind away,' would not be a greater misuse than thus plucking the pinions of our national Bird of Freedom to act as rudders to women's hats.

M. O. W.

Audubon's Seal

(From a granddaughter of Audubon)

Audubon's seal was made from a pen-and-ink sketch of the Wild Turkey, being the portrait of a bird weighing forty pounds. The painting from which the seal was reduced measured about thirty-six by twenty-eight inches. A lady friend in Liverpool having seen the painting, was talking, with others, to Audubon about it, and said to him, "Now you ought to have this Turkey for your coat-of-arms." Audubon said that he was too much of an American to use a crest, or coat-of-arms, but that the picture could be easily reduced to the size of a fob seal, then all the fashion for



gentlemen's watch chains. Some surprise was expressed by the company present at this statement, particularly by the "Lady Rathbone," as Audubon was want to call her. No more was said then, but in due time a tiny pen-and-ink sketch, perfect in every detail, with the motto, "America my Country," was sent to Mme. Rathbone, with Audubon's signature and compliments. Not long after, Audubon received, to his amazement, a beautiful fob seal, cut in topaz, which he wore on his watch chain as long as he lived. It is now a valued possession held by his family. The accompanying cut is made from a die of this seal, and exactly reproduces it in size, etc.—D. T. A. TYLER.

Report of the Audubon Society of the District of Columbia

For the District of Columbia the Secretary has a most encouraging report.

On Saturday, March 25, a very successful exhibit of spring millinery was given at the Hotel Corcoran, the ladies' parlors being kindly loaned for the occasion. About 300 women attended the exhibit in spite of a pouring rain, lasting the whole afternoon. Quite a number of bonnets and hats were sold, and every person attending left well supplied with Audubon literature.

In April, a free lecture by Mr. Henry Olds, entitled "Some Familiar Birds," was given at the First Baptist church, which was also kindly loaned for this most interesting talk. The lecture was fully illustrated by colored lantern slides, and was made doubly entertaining by Mr. Olds' clever imitations of the notes of the various birds explained. About 400 persons attended this lecture.

The Rev. Mr. Leasitt explained the aim and objects of the Audubon Society, Dr. C. Hart Merriam introducing the lecturer in the unavoidable absence of the President of the Society, Surgeon General George M. Sternberg. Audubon literature was again distributed, and some copies of Mrs. L. W. Maynard's valuable book 'Birds of Washington and Vicinity,' were sold.

The Audubon Society has started an Audubon collection of books in the new Free Library. This collection is designed primarily to be books of reference, large and expensive works, more especially for the use of teachers.

For the work in the public schools, Dr. T. S. Palmer and Miss Elizabeth V. Brown have been untiring and most successful. In the spring of 1898, two classes were arranged, one for teachers in the Normal School, in charge of Dr. Palmer, and one for teachers in the Second and Fourth grades, in the hands of Mr. H. C. Oberholser. The classes were limited to 12 members each, and work extended over ten weeks in 1898-9. Specimens were kindly loaned by the Biological Survey, and the classes were enabled to handle, compare, and identify skins of 175 species of the 290 birds recorded for the vicinity of Washington. These specimens included nearly all the land birds from this vicinity. Hints were given concerning the classification of birds, the characters of the principal groups, and the use of keys.

Short talks were also given on especially interesting topics, such as the 'Relation of Birds to other Vertebrates,' 'Feathers and Feather Structure,' 'Flight,' 'Migration,' 'Food,' and 'Nesting Habits.'

The Society this spring purchased 1,000 Audubon buttons from the Society of the State of Wisconsin, Miss Elizabeth V. Brown taking charge of their sale. A large number were sold to children in and outside the schools, and while not strictly members of the Society, they became more interested in the birds through the wearing of this attractive button.

Miss Florence A. Merriam has given several valuable talks this past spring, notably one at the Washington Club, before an audience of about 200 women, which created great enthusiasm and brought the Society an increase in membership. The Secretary has been untiringly busy in trying to get societies organized in the South and in some western states.

JEANIE MAURY PATTEN, *Sec'y.*

ANNOUNCEMENT

THE CHILD LIFE READERS

BY

ETTA AUSTIN BLAISDELL

Assistant Superintendent of Schools, Brockton, Mass.

- I. CHILD LIFE—
A First Reader Price, 25 cts.
- II. CHILD LIFE IN TALE AND FABLE—
A Second Reader Price, 35 cts.
- III. CHILD LIFE IN MANY LANDS—
A Third Reader In preparation
- IV. CHILD LIFE IN LITERATURE—
A Fourth Reader In preparation

The central idea of these books is to *hold the child's interest* by giving him reading-matter (profusely illustrated) that he *can understand and enjoy*. The lessons, therefore, relate exclusively to *child life*.

The First and Second Readers have *easier reading-matter* and *more of it* than do most of the other readers now available for first and second year. They have been graded with the utmost care.

These books, beginning with the Second Reader, have been planned as an *introduction to literature*. The subject-matter, therefore, is confined to material of *recognized literary value*.

The aim of the publishers has been to produce *an artistic set of Readers* that shall be mechanically as nearly perfect as possible.

As a unique feature in binding, they would call attention to the *covers, which are water-proof*, and can be cleansed, when soiled by constant handling, without injury to the book.

RECENT PUBLICATIONS ON NATURE STUDY

- | | |
|--|--|
| BAILEY'S Lessons with Plants \$1.10
Suggestions for Seeing and Interpreting some of the Common Forms of Vegetation. | LANGE'S Hand-Book of Nature Study \$1 net
"The style of the book is fresh and inspiring." |
| BAILEY'S First Lessons with Plants. . 40 cts. net
"Extremely original and unusually practical." | LANGE'S Our Native Birds. How to Protect Them and Attract Them to Our Homes. <i>Just ready.</i> |
| HARDING'S The Liquefaction of Gases. Its Rise and Development \$1.50
Complete and scientific, in a popular style. | MURCHE'S Science Readers.
Vol. I. 25 cents. Vol. IV. 40 cents net.
Vol. II. 25 cents. Vol. V. 50 cents net.
Vol. III. 40 cents. Vol. VI. 50 cents net. |
| INGERSOLL'S Wild Neighbors \$1.50
"Instructive as well as delightful."— <i>Popular Science Monthly.</i> | WEED'S Life Histories of American Insects. \$1.50
"An unusually attractive book."— <i>Dial.</i> |
| JACKMAN'S Nature Study for Grammar Grades \$1 net
Proposes a few of the problems within the comprehension of grammar school pupils, which arise in a thoughtful study of nature, with suggestions for their solution. | WILSON'S Nature Study in Elementary Schools.
FIRST NATURE READER 35 cents
SECOND NATURE READER 35 cents
TEACHER'S MANUAL 90 cents |

See, also, the new book by Mrs. Wright, described on another page

PUBLISHED BY

THE MACMILLAN COMPANY, New York



GOLDEN EAGLE

Photographed from life by H. W. Nash, Pueblo, Colorado

Bird = Lore

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

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. 1

DECEMBER, 1899

No. 6

A Search for the Reedy Island Crow Roost

BY WITMER STONE

Curator of Birds, Academy of Natural Sciences, Philadelphia.



AMERICAN CROW

Photographed from life by W. Gordon Smith

IN the Delaware river, just where it begins to widen out into the bay, and midway between the shores of Delaware and New Jersey, lie two long, low islands, known as 'The Pea-patch' and 'Reedy Island.'

Early in the century the former of these was selected by the government as the site of Fort Delaware, and its importance advanced proportionately in the popular mind. Later on, the lower island, which already boasted of a light-house, became further dignified by the establishment of a quarantine station on its banks.

Although of little importance before the government claimed them, these islands were by no means uninhabited, but were, in fact, well-known as a winter resort. The early inhabitants, though much less

imposing than the soldiers and health officers who have superseded them, did not fail to attract attention—even newspaper notoriety: not from their individualities, but from their countless numbers. In fact they were nothing more than ordinary, despised black Crows, but Crows in such countless numbers that they could not fail to be noticed.

Every evening they came at dusk by thousands and tens of thousands, winging their way in long lines from all points of the compass, and settling down on the reed-covered islands in a solid black phalanx. This winter roosting habit of the Crows is well-known, and many roosts have been located, but the habit seems still to lack a satisfactory explanation. Why should these birds fly back and forth every day over miles and miles of country to roost in some definite spot which, so far as we can judge, is no better suited for roosting purposes than hundreds of other places which they pass by? And why should they gather together every night in such numbers as to attract general attention and invite slaughter by thoughtless gunners, when, by roosting in small numbers wherever they happen to be feeding, they would escape notice? These are questions I shall not attempt to solve.

Estimates placed the number of Crows in these two island roosts at half a million, and they held possession of the islands undisturbed until about the time of the establishment of Fort Delaware. They did not relish this intrusion, and determined to desert the ancestral Pea-patch roost; being also influenced, no doubt, by a storm which flooded the island at night and drowned thousands of the unfortunate birds.

The Reedy Island roost continued in use until the establishment of the Quarantine Station, at a much later day; then it, too, was deserted, and the famous island roosts were no more.

I have long been interested in the winter gatherings of the Crows, and made inquiry of the light-keeper at Reedy Island to ascertain whether any Crows at all remained there at the present time. I was informed that they came across from Delaware as of old in long flights from the west, northwest and southwest, but all passed over the island into New Jersey, where he judged they had established new winter quarters.

The location of this new roost at once became a matter of interest. By further inquiry I learned that Crows at Salem, N. J., nearly opposite the Pea-patch, flew southwards at evening, and by plotting this flight line with those given by the light-house keeper on a map, I found that they joined some four or five miles below Salem, and here I felt sure the roost was to be found.

I had little trouble in impressing an ornithological friend, who resided at Salem, with the importance of locating this roost, and one cold afternoon in January found us driving off in the direction taken by the Salem Crow flight.

When we neared the point at which we thought the roost ought to be, we noticed a scattered line of Crows coming up from the

south, evidently from feeding grounds on the shores of the bay. They came along in twos and threes, and alighted in a corn-field on our left, from which the farmer had neglected to haul in all of the ears. Here was a rare feast, and about a thousand birds were already assembled, to whose numbers constant additions were being made. This, we thought, must be the beginning of the evening assemblage, but, strange to say, no Crows were coming in from the west: these were all southern Crows, and, furthermore, they showed no signs of settling for the night, but were simply intent on the grain.

Driving further on, we inquired of a man where the Crows roosted, and were assured that they made use of a long strip of woods lying between us and the river. Investigation, however, showed not a Crow in the wood, and we were inclined to believe that we had been purposely misled. Passing through the trees, we had an unobstructed view of the river. The sun was just setting, a round, red ball of fire in the west, and in the yellow light we could see the lines of Delaware Crows crossing towards us, while in the fields before us were hundreds of Crows lazily flapping about much as the others were in the corn-field to the east.

Here, again, we were directed back to the same wood and assured that the birds would repair there when ready. It was just dusk as we hitched our horse and entered the woods: there was still no sign of Crows, but as we emerged on the farther side we found that an immense flight was just beginning to pass overhead from the westward: evidently the river Crows had concluded that bedtime had come. They did not, however, alight in the trees, but passed over and dropped noiselessly into the low fields just before us, seeming to select a black, burnt area on the far side. To our amazement this "burnt" patch proved to be a solid mass of Crows sitting close together, and in the gathering gloom it was difficult to see how far it extended. Four immense flights of the birds were now pouring into the fields, in one of which we estimated that 500 Crows passed overhead per minute, during the height of the flight.

It was now quite dark, and we began to think that the birds had no intention of retiring to the woods, so determined to vary the monotony of the scene and at the same time warm our chilled bodies. We, therefore, ran rapidly toward the nearest birds and shouted together just as they first took wing. The effect was marvellous; with a roar of wings the whole surface of the ground seemed to rise. The birds hovered about a minute, and then entered the woods: we soon saw that but a small portion of the assemblage had taken wing. Those farther off had not seen us in the darkness, and doubtless thought that this was merely the begin-

ning of the regular nightly retirement into the trees. The movement, once started, became contagious, and the Crows arose steadily section by section. The bare branches of the trees which stood out clearly against the western sky but a minute before seemed to be clothed in thick foliage as the multitude of birds settled down.

After all had apparently entered the roost, we shouted again and the roar of wings was simply deafening; another shout brought the same result in undiminished force, and even then, probably not half the birds took wing.

They soon settled down again, and we were glad to leave them in peace. So far as we could learn they are but little molested, and let us hope that this may continue. Many of the large roosts farther north in Pennsylvania and New Jersey, seem to be rapidly decreasing in size, owing to thoughtless persecution, and eventually the poor birds may be driven to roost in scattered detachments, as would, indeed, seem best for their preservation; but if this comes to pass, one of the most impressive phenomena of our bird-life will have disappeared.

Winter Bird Notes from Southern New Hampshire

BY WILLIAM EVERETT CRAM

Illustrated by the author



ANUARY 1, 1898. Northern birds have, as a rule, been decidedly rare this winter. In November, Goshawks were quite abundant, and a few Snowy Owls were also to be seen at that time. As I was returning from a tramp just at dusk one evening, one of the great white fellows came sailing by only a few yards from the ground. His manner of sailing and something in the set of his wings reminded me strongly of an Eagle flying before the wind; there were evident the same power and swiftness without visible effort. He came from the northeast on the wind of a rising storm, and had evidently but just arrived, being in much more perfect plumage than is usual in November, appearing, at the distance of only a few yards, absolutely white, with his big yellow eyes burning among his snowy feathers.

Snow Buntings were also common in November, and Horned Larks during the first part of the month. I noticed a large flock of the latter one morning feeding in the stubble and, observing that they were moving towards me, crouched motionless until they came up and surrounded me, gathering seeds in the earnest, industrious

manner of domestic Pigeons, and exhibiting but little more alarm at my presence. On the 27th a Shrike alighted in the top of the elm near the house, and, after reconnoitering for a few moments, started down into the orchard, but apparently missed whatever it struck at and, turning upward, alighted in a smaller elm by the road, when it at once began tearing to pieces an old bird's nest, behaving exactly as if in anger at its disappointment.

For some time I was unable to discover what it had at first been after, but finally caught sight of a Downy Woodpecker clinging motionless to the underside of a small branch in an apple tree, with



SNOWY OWL

every feather drawn down close to its body, just as an owl does when trying to escape notice.

After a while it began turning its head from side to side, as if to make sure its enemy had disappeared. When I attempted to make it fly, it merely crept mouse-like about the branches until perfectly certain that the Shrike had gone, when it took wing and flew to another tree, where it presently went to work as if nothing had happened.

Throughout December the only birds to be found were Crows, Blue Jays, Downy Woodpeckers, Black-capped Chickadees, Nuthatches, Golden-crowned Kinglets, Brown Creepers, and Partridges, with an occasional Bald Eagle or Rough-legged Hawk and a very few Flickers. A large flock of Wild Geese passed over on the 7th, and I saw a few Tree Sparrows and a Winter Wren about the last of the month. The Sparrows lingered about until the first week in January, when a large flock of Snow Buntings made their appearance. A few days later, however, neither Sparrows nor Buntings were to be found anywhere.

JANUARY 6. Going through the woods I heard the small birds making quite a fuss in the young growth, and on looking for the cause, discovered a Saw-whet Owl in a little hemlock. When I first caught sight of him he was sitting on one of the smaller branches ten feet from the ground, apparently asleep, with his back to the trunk and his head tipped back. On being closely approached, he seemed to awake suddenly with a start, at once turning his great round eyes in my direction, and after that, never removed them from me for an instant, though I walked around his tree several times. He had a partly eaten white-footed mouse slung across the branch beside him, probably the remains of his breakfast.

Most of the small birds contented themselves with chirping at him from the surrounding trees, occasionally approaching to inspect him more closely and then flying off again, but one Red-breasted Nuthatch remained from the first on a twig close to the Owl's head, and kept up a continual harsh rasping cry, as if having some especial cause of complaint against him. A Flicker and some Blue Jays alighted in the neighboring trees, but not seeing anything of importance, soon flew away again.

When I shook the tree the Owl merely fluttered a few yards, and lit on a maple sapling just out of my reach. The next time he tried to hide by alighting on the further side of the stem of a pine several inches in diameter, but finding this of no avail, at

last took a longer flight off through the woods, where I was unable to follow him.



RED-TAILED HAWK

JANUARY 28. Heard what I at first took to be the song of a Ruby-crowned Kinglet today, but it proved to be a Black-capped Chickadee, uttering what was to me an entirely new note; like the Kinglet's, only fainter and shorter, with just a little of the ring of the Canary's song in it. He was sitting all alone under the dark evergreens, singing to himself in

a manner wholly out of keeping with the general disposition and taste of the Chickadee. When I at last disturbed him, he flew to another tree and began searching for insects, uttering the familiar note of his species.

FEBRUARY 3. There is a little Junco hopping about the path today, in spite of the fact that the mercury has been very near zero most of the time for the last fortnight, and that the snow is drifted eight or ten feet deep in places. He appears to spend a consid-



GREAT HORNED OWL

erable portion of his time in the woodshed, poking about among the chips, etc., and I fancy sleeps somewhere about the building.

There are also a few Flickers and at least one Meadowlark in this vicinity, and since the last heavy snowfall they have become unusually tame and familiar, coming close about the house for food. Goldfinches and Tree Sparrows are still quite abundant, and there is a flock of fifty or sixty Pine Grosbeaks, mostly in young plumage, in the woods about a mile to the west of us, the first I have seen this winter.

FEBRUARY 6. About five o'clock this evening a large Goshawk in rather dark plumage came flying across the field only a few yards above the snow. As he neared a tall elm he rose in the air and alighted near the top of the tree, and after sitting there for a few moments, turning his head in all directions, he opened his wings and tumbled from his perch, falling several yards down among the branches before regaining his balance, when he flew rapidly off toward the west and disappeared among the pines. Just a week ago I noticed where a Goshawk, judging from the tracks in the snow, had killed a rabbit, so that it would seem that they have not been entirely absent at any time this winter.

FEBRUARY 7. Have just seen a Goshawk, apparently in young plumage, flying west at a height of perhaps sixty or seventy yards from the ground.

FEBRUARY 13. The Great Horned Owls began hooting nearly an hour before sunset this evening. It is remarkable how loud their cry sounds at a distance of half a mile or even a mile. I am convinced that they can be heard distinctly two miles away, for I have often heard them in the day time from a direction in which the nearest woods were at least as far as that. There are always several pairs dwelling in a certain dark hemlock swamp about a mile and a half away, and sometimes in the evening, or by moonlight, they come hunting across the meadows and pastures, hooting at intervals as they come. When they get within one hundred yards or so their cry is loud enough to arouse everyone in the house.

FEBRUARY 18. Followed the track of a Hawk, apparently a Goshawk, twenty or thirty rods through the birch woods west of the cove. From the appearance of the tracks the bird must have walked much after the manner of a Crow, though dragging its claws more. Occasionally it hopped for a few feet. There was no sign of its having killed any game near there and having eaten so much as to be unable to fly at once, as is sometimes the case. At times it followed in the tracks of rabbits for some distance. I have often known them to do this, and am inclined to think that they occasionally hunt rabbits in this manner where the under-brush is too dense to allow them to fly through it easily. I have sometimes followed their tracks through the brush until I came upon the remains of freshly killed rabbits which they had been eating. On coming out into an opening, I saw a beautiful male Goshawk in full blue plumage perched on the top of a dead maple in a swamp. When I tried to approach, he took wing and flew off toward the north.



How the Central Park Chickadees Were Tamed

BY A. A. CROLIUS*



IN the early part of the winter of 1898-9 Chickadees were unusually abundant in Central Park, New York City, and a friend and myself saw them come down and get some of the nuts we were feeding to White-throated Sparrows. We were, of course, much interested, and determined to see if we could tame them. They would take the nuts to a limb, eat all they wished, and hide the rest in crevices in trees or bushes, where, I think, they seldom found them again. For the impudent and ever wide-awake English Sparrow watched and got the pieces almost as soon as they were deposited. After feeding them in this way for some time, we tried to get them to eat from our hands, and finally succeeded by first placing our hands on the ground with a nut about a foot from our fingers, then a little nearer, then on the ends of our fingers, and lastly in the palms of our hands. There was a great shout when they hopped on our hands the first time, our delight being indescribable.

Finding that kneeling or bending over on the ground was rather hard work, we tried holding out our hands when standing, or while sitting on the benches, and they very soon came, no matter where we were or in what attitude. The little creatures never seemed to get tired if we remained hours at a time, and it was indeed difficult to tear oneself away. Just as I would make up my mind to be off one would fly over my head calling *chick-a-dee-dee* in such a bewitching way as to make it impossible to leave. I would say to myself, "Just one piece more," then throw a lot of nuts on the ground and make a 'bee line' for home, never looking back for fear the temptation would be too great, and I should find myself retracing my steps. After a time they would come to me and follow me anywhere in the park, whenever I called them, and getting better acquainted I found the birds possessed of so many different traits of character that I named each one accordingly. One I called the 'Scatterer,' because he stood on my hand and deliberately threw piece after piece of nut on the ground, looking down as they fell with the most mischievous twinkle in his eyes, as much as to say, "see what I've done," then take a piece and fly away. This he did dozens of times in succession. I thought at first he would rather pick them up from the ground, but

*In BIRD-LORE for April, pp. 55 and 58, there were given accounts of experiences with the remarkably tame Chickadees that passed the winter of 1898-9 in Central Park, New York City. The present paper solves the mystery of their surprising confidence in man.—ED.

he came directly back and waited for me to do it. Another I called 'Little Ruffled Breast,' on account of the feathers on the breast being rough and much darker than the rest. He was the most affectionate, had a sweet disposition, and, like human beings of the same character, was often imposed upon, many times being driven off by the others when he was just about taking a nut. He was very tame, and had perfect confidence in anyone who would feed him. The third I named the 'Boss,' because he took the lead and carried the day. He was a beauty, spick and span in his dress, not a feather out of place, and plump and perfect in form. The fourth, dubbed 'Little Greedy,' was very fascinating, and I must confess to loving him more than the rest, having had a most novel experience with him, and one never to be forgotten. He came to me one morning, and, lighting on my hand, sang *chick-a-dee-dee* two or three times, helped himself to a nut, and, perching on my forefinger, put the nut under his foot, as I have seen them do many a time on the trees, remaining there until he had eaten it. I was thrilled through and through with the sensation and the perfect trustfulness of the little creature, and was sorry when he had finished. But why was he called Greedy? Because he usually took two pieces instead of one, and, strange to say, knew that he must have both the same size or one would fall out. It was very funny to see him with a good sized piece, his bill stretched to its utmost capacity, trying to fit in another. He turned his bill first on one side then on the other, thinking he could wedge it in by forcing it against my hand, and he succeeded in this wonderful feat by his perseverance and indomitable will.



The Surprising Contents of a Birch Stub

BY FRANK M. CHAPMAN



AFTER seeing Dr. Roberts' interesting Chickadee photographs, published in the first number of BIRD-LORE, my ambition was aroused to discover a nest of this species so situated as to afford an opportunity to secure equally charming pictures of Chickadee life. Late in May the desire was gratified by the discovery, at Englewood, N. J., of a Chickadee's nest in a white birch stub, about four feet from the ground, a height admirably suited to the needs of bird photography.

I will not here present the results of my study of the parent birds during their period of incubation, but will pass at once to that part of my experience which relates to their progeny.

Returning to the nest on June 12th, nothing was to be seen of either parent, and I feared that they or their offspring had fallen victims to the countless dangers which beset nesting birds and their young. Looking about for some clue to their fate, I found on the ground, near the nest-stub, the worn tail-feathers of the female bird. The molting season had not yet arrived, nor would she have shed all these feathers at the same moment. There could, therefore, be only one interpretation of their presence. Some foe, probably a Sharp-shinned or Cooper's Hawk, since the predaceous mammals for the most part hunt at night when the Chickadee would be snugly sleeping in her nest, had made a dash and grasped her by the tail, which she had sacrificed in escaping. A moment later the theory was supported by the appearance of a subdued looking Chickadee, *sans* tail, and I congratulated her on her fortunate exchange of life for a member which of late had not been very decorative and of which, in any event, nature would have soon deprived her.

The young proved to be nearly ready to fly, and carefully removing the front of their log-cabin, a sight was disclosed such as mortal probably never beheld before, and Chickadee but rarely.

Six black and white heads were raised and six yellow-lined mouths opened in expressive appeal for food. But this was not all: there was another layer of Chickadees below, how many it was impossible to say without disentangling a compact wad of birds in which the outlines of no one bird could be distinguished. So I built a piazza, as it were, at the Chickadee threshold, in the shape of a perch of proper size, and beneath, as a life-net, spread a

piece of mosquito-bar. Then I proceeded to individualize the ball of feathers; one, two, three, to seven were counted without undue surprise, but when an eighth and ninth were added, I marvelled at the energy which had supplied so many mouths with food, and at the same time wondered how many caterpillars had been devoured by this one family of birds.

Not less remarkable than the number of young—and no book I have consulted records so large a brood—was their condition. Not only did they all appear lusty, but they seemed to be about equally developed, the slight difference in strength and size which existed being easily attributable to a difference in age, some interval, doubtless, having elapsed between the hatching of the first and last egg.

This fact would have been of interest had the birds inhabited an open nest, or a nest large enough for them all to have had an equal opportunity to receive food, but where only two-thirds of their number could be seen from above at once it seems remarkable, that, one or more failing to receive his share of food—and a very little neglect would have resulted fatally—had not been weakened in consequence and crushed to death by more fortunate members of the brood. Nor was their physical condition the only surprising thing about the members of this Chickadee family; each individual was as clean as though he had been reared in a nest alone, and an examination of the nest showed that it would have been passed as perfect by the most scrupulous sanitary inspector. It was composed of firmly padded rabbit's fur, and except for the sheaths worn off the growing feathers of the young birds, was absolutely clean. Later I observed that the excreta of the young were enclosed in membranous sacs, which enabled the parents to readily remove them from the nest.

The last bird having been placed in the net, I attempted to pose them in a row on the perch before their door. The task reminded me of almost forgotten efforts at building card houses which, when nearly completed, would be brought to ruin by an ill-placed card. How many times each Chickadee tumbled or fluttered from his perch I cannot say. The soft, elastic net spread beneath them preserved them from injury, and bird after bird was returned to his place so little worse for his fall that he was quite ready to try it again. On several occasions eight birds were induced to take the positions assigned them, then in assisting the ninth to his allotted place the balance of the birds on either side would be disturbed and down into the net they would go.

These difficulties, however, could be overcome, but not so the

failure of the light at the critical time, making it necessary to expose with a wide open lens at the loss of a depth of focus.

The picture presented, therefore, does not do the subject justice. Nor can it tell of the pleasure with which each fledgling for the first time stretched its wings and legs to their full extent and preened its plumage with before unknown freedom.

At the same time, they uttered a satisfied little *dee-dee-dee*, in



A CHICKADEE FAMILY

Photographed from nature by F. M. Chapman

quaint imitation of their elders. When I whistled their well-known *phc-be* note they were at once on the alert, and evidently expected to be fed.

The birds were within two or three days of leaving the nest, and the sitting over, came the problem of returning the flock to a cavity barely two inches in diameter, the bottom of which was almost filled by one bird.

I at once confess a failure to restore anything like the condition in which they were found, and when the front of their dwelling was replaced Chickadees were overflowing at the door. If their healthfulness had not belied the thought, I should have supposed it impossible for them to exist in such close quarters.

A few days later I found their home deserted, and as no other pair of Chickadees was known to nest in the vicinity, I imagine them to compose a troop of birds I sometimes meet in the neighborhood.

Richardson's Owl

BY P. B. PEABODY

With photographs from nature by the author



ON the thirteenth of April last, at Hallock, Minn., while afield in the morning after Migration Report data. I stumbled suddenly upon a Richardson's Owl, in a willow bush, four feet up, on a brush-land side-hill, two hundred yards above the river. A strong wind was blowing, and kept the willow stems a-swaying and the feathers fluttering, while the dullness of an overcast sky made quick exposures impossible. Nevertheless, I hurried home, a mile away, and returned with camera and plates,—'Crown' and 'Stanley.' The bird was



RICHARDSON'S OWL

still *in situ*, and leaning, as before, against the upright stem nearest him, as a brace against the wind. With stop 16, or a little larger, and time $\frac{1}{5}$ to $\frac{1}{2}$ second, both according to the conditions of wind and sky, eight exposures were made, beginning at five feet distance,

and with waits for lulls in the wind. The bird seemed fearless, but I dared not try to put him on the alert, nor cause him to open his eyes. The eighth exposure was made at about two feet, the camera leisurely dismounted, and the bird then quietly caught



RICHARDSON'S OWL

about the back, with the left hand, while his attention was distracted with the right.

The little captive showed no fight nor did he try to escape so long as I held him by the feet, in an upright position. But when his body was clasped he would struggle vigorously. With all the handling I gave him in taking weights and measures, the only wounding he caused my hands was made in his attempts to secure a better grasp of my holding hand. While not actually tame, from the first he showed ecstatic delight in my stroking of the feathers on the back of his head,—chirping delightedly during the process, with much the manner and voice of a chicken when tucked under the maternal wing.

While spending his first night of captivity in my study, pending careful examination, he dropped upon my book-cases several casts, which are still awaiting analysis. At noon of the second

day he was placed in the garret, where he had a measure of darkness and plenty of wing room. Here he ate readily the heads of food that was left convenient, varying this occupation with the tearing to pieces of an old Cooper's Hawk skin. So far as I could judge, he ate only on alternate days.

During the eight days of his sojourn with me, no increase of tameness was shown; and he would fly when I came near, seeking the darkest cranny of the garret, scolding me often with the characteristic anger-note of all the smaller Hawks and Owls. Soon my captive found a permanent home in the family of the foster-father of Minnesota ornithology, where, I was soon informed, he became quickly domesticated,—eating bits of steak from a chop-stick, beheading English Sparrows with neat despatch, and drinking from a teaspoon.

For Teachers and Students

An 'Advisory Council'




IT gives us unusual pleasure to announce a plan, the fulfilment of which, already assured, will, we believe, be of great assistance to bird students and exert an important influence on the increase in our knowledge of North American birds.

Realizing from a most fortunate experience how greatly the past-master in ornithology may aid the beginner, we have felt that it would be an admirable scheme to form an 'Advisory Council,' composed of leading ornithologists throughout the United States and Canada, who would consent to assist students by responding to their requests for information or advice, the student being thus brought into direct communication with an authority on the birds of his own region.

The response to our appeal has been most gratifying. With-
out exception the ornithologists whom we have addressed have cordially endorsed the proposed plan, and signified their willingness to coöperate with us in this effort to reach the isolated worker. Nearly every state in the Union and province in Canada has been heard from, and we expect in our next number to publish the names and addresses of the more than fifty prominent ornithologists who will form BIRD-LORE'S 'Advisory Council.'—ED.

“Humanizing” the Birds

CAROLINE G. SOULE



IN the first number of BIRD-LORE the author of ‘Bird Studies for Children’ says: “Most bird stories will interest them [children], especially if the birds are humanized for them by the teller of the tale.” Humanizing, in this connection, means endowing with human characteristics, and is a process much in vogue just now among writers of nature-study books and papers for the use of children and teachers. Let us see if it is worth doing—or even is justifiable.

Birds possess some characteristics or qualities which are also possessed by human beings, and by other animals. These qualities are not merely “human” then, but are common to many species of creatures. Since birds already have these qualities, there is no need of endowing them with them. To “humanize” the birds by ascribing to them human qualities which they do not and cannot possess, is only to misrepresent them, and stories which so humanize them are of no more value, as nature-study or bird-study, than so many fairy-tales. More than this—they are positively harmful because they give, as facts, statements about existing creatures which are not true. This is not bird-study: it is only telling stories which interest the children, and which have no value except in keeping them quiet. The children are not interested in the real birds, for they are not told about them. They are interested in the stories, invented for this end, about creatures which the story-teller *calls* birds but which are only human characteristics draped on bird forms. Very slight changes would be needed to make the same stories fit any humanized animal. The real nature of the bird is left out of these humanized bird stories and the loss is very great, as always when truth is left out.

To tell of “Mr. and Mrs. Robin” is well enough, for the titles merely mean the male and female. To represent them as talking is well enough, for they certainly communicate with each other and their young, and putting their communications into human speech is merely translating them. But to represent them as uttering highly moral speeches is all wrong, for these are beyond the power of the birds. The moment that the story humanizes them in any such way it becomes of no value, because it is false to nature.

The humanizing process is lavishly applied to all sorts of creatures, even to plants.

For instance, in a very popular book occurs the following:—

“And so the witch-hazel, knowing that neither boy nor girl, nor bird nor beast nor wind, will come to the rescue of its little ones, is obliged to take matters into its own hands, and this is what it does.” This is an extreme case of humanizing. The writer states that this brainless plant *knows* that its seeds will not be scattered by children, animals or wind. This implies that the plant is conscious of its seeds: that it realizes the importance of their distribution; that it knows what boys, girls, birds, animals and wind are: that it knows how the seeds of other plants are distributed; and that it plans a method of scattering its own seed! This is certainly more mental power than we are warranted in ascribing to a plant. But children are much interested in the story, and think the witch-hazel very clever to plan so ingenious a way of distributing its seeds. That it is not true does not trouble them, because they do not know it, and I can learn of very few teachers using this book, who have thought enough about the subjects treated to realize that they are so humanized as to be untrue to their own natures. I quote this as an instance of the lengths to which humanizing may be carried without discovery by the average reader.

Humanizing the creatures takes them out of their own place in Nature, by endowing them with powers higher than they can really possess. It sets aside all the laws of evolution, and is not only untrue to the nature of the individual, but to the principles which underlie all Nature. Young children are not ready for these general laws and principles, but it cannot be good pedagogics to give them ideas in direct contradiction to all those laws which must be taught them a little later, and which will at once prove the falseness of this earlier teaching.

“Interest” is not everything in teaching children. Truth counts for more in the long run, and, especially in Nature study, may be made quite as interesting as “humanization.”

‘On the Ethics of Caging Birds’

TO THE EDITOR OF ‘BIRD-LORE:’

I thank you for offering me an opportunity to be heard in my own defense. But controversy is—if possible—more distasteful to me than injustice. Therefore, while it is painful to be misrepresented, I will answer my critics only by saying that they have entirely—I do not say wilfully—misunderstood me, and that no one who knows me could for an instant believe me guilty of “favoring” or “encouraging,” the caging, the wearing, or the eating of our little brothers, the birds.

OLIVE THORNE MILLER.

For Young Observers

The Birds' Christmas Tree



THE BIRDS' CHRISTMAS TREE

From the painting of A. Tideman, published in
'Norwegian Pictures,' London, 1885.

HOW many of the younger readers of BIRD-LORE know that in Norway, birds, as well as children, have Christmas trees? Indeed, it is said that the children do not enjoy their own gifts until they know the birds have been provided for.

Concerning this beautiful custom of putting out a yule sheaf for the birds, Dr. Leonhard Stejneger, the eminent Norwegian ornithologist, writes us that the sheaves are usually of barley or oats, and are placed on high poles standing either in the yard or nailed to the gable end of one of the houses, preferably the store-house or "stabbur," or on the stable, but always where they can be seen from the dwelling

house. Dr. Stejneger adds that the origin of the custom is shrouded in the mystery of the mythological ages.

Here, then, is a country where, as far as anyone knows, the birds have always had a Christmas tree, while in America most birds, I imagine, consider themselves lucky if they chance to find a stray crumb on Christmas morning. So let us all be good Norwegians this coming Christmas and see that the birds are well supplied, if not with sheaves—at least with crumbs, seed, and grain for the Juncos and Sparrows, suet, ham-bones, and bacon rinds for the Woodpeckers, Chickadees, and Nuthatches. And then let us improve on the Norwegian usage by making every winter day Christmas for the birds, so that no matter how deep the snow, they may always be sure of a meal. Then, next March, write and tell BIRD-LORE of your winter guests, who they were, and what you have learned of their habits. To the boy or girl of fourteen years, or under, who sends us the best account of his or her experience in feeding the birds this winter, we will give a copy of Mrs. Wright's 'Citizen Bird' or 'Wabeno.'—ED.

The Little Brown Creeper

BY GARRETT NEWKIRK

“ Although I'm a bird, I give you my word
That seldom you'll know me to fly ;
For I have a notion about locomotion,
The little Brown Creeper am I,
Dear little Brown Creeper am I.

“ Beginning below, I search as I go
The trunk and the limbs of a tree,
For a fly or a slug, a beetle or bug ;
They're better than candy for me,
Far better than candy for me.



BROWN, CREEPER

Photographed from a mounted specimen

‘ When people are nigh I'm apt to be shy,
And say to myself, ‘ I will hide,’
Continue my creeping, but carefully keeping
Away on the opposite side,
Well around on the opposite side.

“ Yet sometimes I peak while I play hide and seek,
If you're nice I shall wish to see *you* :
I'll make a faint sound and come quite around.
And creep like a mouse in full view,
Very much like a mouse to your view.”

Notes from Field and Study

An Interesting Phœbe's Nest

The accompanying illustration shows an interesting Phœbe's nest. It is well-known that this bird prefers to build close to some overhead protection, but I have never



NEST OF PHEBE
Photographed from nature

seen, and have heard of only one other similar structure, showing such evidence of forethought by the builder; for this bird has constructed a pedestal by means of which her nest was raised to the desired height.

The location chosen was three feet or so back under the piazza roof of a lonely, unused summer cottage by the shore of Webster lake, in Franklin, N. H.

The foundations were begun on a door-cap to the left of, although almost in touch with, an upright cleat. Soon the builder made a turn to the right, that the pedestal might rest firmly against this cleat. From this point the work continued perpendicularly full twelve inches, with the breadth of about three inches and a thickness of one and one-half inches. Upon this the enlargement was made for the nest proper, which was destined to safely cradle her brood of four. — ELLEN E. WEBSTER, *Franklin Falls, N. H.*

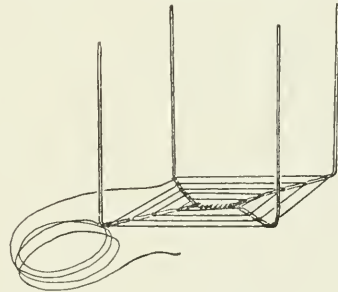
[Two years ago John Burroughs showed

us a nest similar to the one here described, built beneath the eaves, on a slight projection in the rough hewn rock of the railway station at West Park, N. Y.—ED.]

A Useful Nest-Holder

After the leaves fall many deserted birds' nests will be exposed to view. The larger number will still be found serviceable for study, and in collecting them a note of the site, height from the ground, if in a tree or bush, etc., should be made to aid in their identification.

The accompanying cut shows a very useful holder for such specimens. It was designed by Mr. George B. Sennett, and is made of annealed wire, about the bottom of which is tied hair wire, as shown. At this stage, the nest is placed in the holder, the four uprights are cut off to the required height, and bent in or out, in order to bring them closely to the sides of the nest; the wrapping with hair wire is then con-



tinued until the nest is firmly bound. In this way such loosely built nests as those of the Mourning Dove or Cuckoo may be held in shape without in the least concealing their structure.—ED.

A Singing Blue Jay

Not long ago, when the snow covered the ground several inches deep, I heard as sweet a little song as one could expect to hear from a Warbler in May, come from a clump of small plum trees in the back yard. Creeping softly in the direction of the sound, I could see nothing but a stately Blue Jay perched upon one of the upper limbs. I waited patiently, and soon the

song came again, sweet and mellow as before; this time I could plainly see the Jay's open bill and the muscular movements of his throat. I could hardly believe my eyes, as I had been accustomed to hear only harsh sounds from a Jay's throat. I raised to a standing posture, the Blue Jay flew away. I looked carefully all about, and no other birds were in sight. This Blue Jay remained in the neighborhood all winter, and several times I had the pleasure of hearing his sweet little song.—FRANK E. HORACK, *Iowa City, Iowa.*

To Hunt Southern Birds

Rockville Centre, L. I., November 9.—O. H. Tuthill and Robert T. Willmarth, of this village. Benjamin Molitor, of East Rockaway, and Coles Powell, of Seaford, started yesterday on a bird skinning and stuffing expedition to the Florida coast. The men went aboard of Mr. Molitor's little 28-foot sloop, Inner Beach, which is fitted with both sails and gas engine.

They take the inside route through bays, rivers and canals to Beaufort, N. C. From there on to their destination they will have to take their chances outside on the ocean. The men go to shoot all kinds of water birds, for which there is an unprecedented demand this season by millinery manufacturers. After being killed, most of the birds will be skinned and stuffed roughly with cotton, and every week shipments will be made to New York.

Mr. Tuthill is an old hand in the business. The last time there was a large demand for birds by the makers of women's headgear, about twelve years ago, he took an outfit to Florida and during the winter shipped 140,000 bird skins to New York.—*Brooklyn Eagle.*

[We met Mr. Tuthill in Key West in February, 1892, and heard him state that during a preceding winter his party had killed 130,000 birds for millinery purposes, and the information contained in the above clipping is doubtless, therefore, accurate.—ED.]

American Ornithologists' Union

The seventeenth annual congress of the American Ornithologists' Union convened at the Academy of Natural Sciences, in Philadelphia, on November 13, 1899. At

the business meeting held on the night of that day the following officers were elected for the ensuing year: President, Robert Ridgway; vice presidents, C. Hart Merriam and C. B. Cory; secretary, John H. Sage; treasurer, William Dutcher; councilors, C. F. Batchelder, F. M. Chapman, Ruthven Deane, J. Dwight, Jr., A. K. Fisher, T. S. Roberts, Witmer Stone. Two corresponding and eighty-two associate members were elected.

The program for the three days' public sessions, on November 14-16, included the following papers:

Notes on the Flammulated Screech Owls, Harry C. Oberholser; Three Years' Migration data on City Hall Tower, Philadelphia, Wm. L. Bailey; A Quantitative Study of Variation in the Smaller American Shrikes, Reuben M. Strong; The Habits and Structure of Harris' Cormorant, R. E. Snodgrass and F. A. Lucas; Bering Sea Arctic Snowflake (*Passerina hyperborea*) on its breeding grounds, C. Hart Merriam; On the Plumages of Certain Boreal Birds, Frank M. Chapman; On the Perfected Plumage of *Somateria spectabilis*, Arthur H. Norton; The Summer Molting Plumage of Eider Ducks, Witmer Stone; An Oregon Fish Hawk Colony, Vernon Bailey; Exhibition of a series of field sketches made from absolutely fresh birds, showing the true life colors of the soft parts, mostly in the breeding season, Louis Agassiz Fuertes; The Sequence of Plumages and Molts in Certain Families of North American Birds, Jonathan Dwight, Jr.; The Ranges of *Hylocichla fuscescens* and *Hylocichla f. salicicola*, Reginald Heber Howe, Jr.; On the occurrence of the Egyptian Goose (*Chenalopex aegyptiaca*) in North America, Frank C. Kirkwood; Notes on the Habits of the Great Mexican Swift (*Hemiprocne zonaris*), Sam'l N. Rhoads; Further remarks on the Relationships of the Grackles of the Subgenus *Quiscalus*, Frank M. Chapman; Audubon's Letters to Baird—compiled from Copies of the originals kindly furnished by Miss Lucy H. Baird, Witmer Stone; A Peculiar Sparrow Hawk, William Palmer; The Requirements of a Faunal List, W. E. Clyde Todd; Report of

the A. O. U. Committee on Protection of N. A. Birds, Witmer Stone; An account of the Nesting of Franklin's Gull (*Larus franklinii*) in Southern Minnesota, illustrated by lantern slides, Thos. S. Roberts; Bird Studies with a Camera, illustrated by lantern slides, Frank M. Chapman; Home Life of some Birds, illustrated by lantern slides, Wm. Dutcher; Slides—series of Kingfisher, Gulls, etc., Wm. L. Baily; The Effects of Wear upon Feathers, illustrated by lantern slides, Jonathan Dwight,

Jr.; Exhibition of lantern slides of Birds, Birds' Nests and Nesting Haunts, from Nature, members; Language of the Birds, Nelson R. Wood; A New Wren from Alaska, Harry C. Oberholser; The Molt of the Flight-feathers in various Orders of Birds, Witmer Stone; Some Cuban Birds, Jno. W. Daniels, Jr.; On the Orientation of Birds, Capt. Gabriel Reynaud, French army; On the Habits of the Hoatzin (*Opisthocomus cristatus*), George K. Cherrie.

Book News and Reviews

A DICTIONARY OF BIRDS. By ALFRED NEWTON, assisted by HANS GADOW, and others. Cheap issue, unabridged. London, Adam and Charles Black, 1893-96. [New York, The Macmillan Co.] 8vo, pp. xii+1,088, numerous line cuts. Price, \$5.

Bird students should be grateful to the publishers of this invaluable valuable work for issuing it in an edition which places it within the reach of all.

It is not necessary for us to add our meed of praise to what is universally conceded to be "the best book ever written about birds." To those of BIRD-LORE'S readers who have not had the fortune to examine this or the preceding edition, we may say that the work is based on Professor Newton's article 'Birds' in the Encyclopædia Britannica which, with the cooperation of eminent specialists, has been enlarged and augmented to make an ornithological dictionary of over 1,000 pages; an indispensable work of reference to every student of ornithology who will find in its pages an immense amount of information not elsewhere obtainable.—F. M. C.

WABENO, THE MAGICIAN. The Sequel to Tommy-Anne and the Three Hearts, by MABEL OSGOOD WRIGHT. Illustrated by JOSEPH M. GLEESON. New York, The Macmillan Company, 1899. Price, \$1.50.

This pretty green and gold covered book, with its mystical sign of three interlaced hearts, will be a treasure to the army of

little folks who have so enjoyed its predecessor 'Tommy-Anne.' Not only will they meet in its pages the delightful Tommy-Anne herself, but several other old friends, Obi, the almost too-human Waddles, the unfortunate Horned Owl, and others. In this volume Anne—having dropped the Tommy from her name, pushes her "whys" into the several kingdoms of earth and air. She interviews the "Man in the Moon," learns the story of the red man from a talkative Indian arrow head, and the secrets of the hive from a friendly honey-bee. Through her magic spectacles life at the bottom of the sea becomes visible, and the past history of the earth comes to light. It may readily be seen that the author has not forgotten her own childish "wonderments," and is therefore eminently fitted to satisfy those of children today, and although the imagination has full play in the manner of conveying it—the "how"—the information given is trustworthy. The book, with all its charm of fantasy may be put into the hands of children with the assurance that it will let them into the secrets of many interesting things in Nature, and leave no sting of false statements to be corrected as the years pass on.

The book, as usual with the publications of the house of Macmillan, is fully illustrated, beautifully printed and altogether a pleasure to look at and handle.—OLIVE THORNE MILLER.

THE BIRDS OF EASTERN NORTH AMERICA. Key to the Families and Species. By CHARLES B. CORY. Part I, Water Birds, pp. i-ix, 1-130; Part II, Land Birds, pp. i-ix, 131-387. 4to. Numerous illustrations. Special edition printed for the Field Columbian Museum, Chicago, Ill., 1899.

Mr. Cory has spared neither pains nor expense to lighten the labors of young ornithologists in the matter of identification. Arbitrary 'Keys' arranged on apparently the simplest plans, a careful use of distinguishing type, and numberless illustrations characterize this work, which will doubtless rank as its talented author's most valuable and important contribution to the literature of ornithology.

The present volumes contain only the analytical keys to families and species, and apparently are to be followed by others giving detailed descriptions of plumage and biographical matter. A list of the birds of Eastern North America, with the ranges of the species, is appended to the second volume.—F. M. C.

DICKEY DOWNY; the Autobiography of a Bird. By VIRGINIA SHARPE PATTERSON. Introduction by Hon. JOHN F. LACEY, M. C. Drawings by ELIZABETH M. HALLOWELL. Philadelphia, A. J. Rowland, 1899. 16mo, pp. 192, full-page colorotypes, 4.

In this little volume the Bobolink recounts the history of his life with particular reference to his experiences with man. Due regard has been paid to the known habits of the bird, and the book seems well designed to arouse the interest and enlist the sympathy of children in bird-life. The colored illustration of the Scarlet Tanager facing page 64 is wrongly labeled "Summer Tanager," but beyond this slip we notice no errors.

Congressman Lacey's introduction shows that its writer has an adequate conception of both the economic and æsthetic value of birds, of the evils of wantonly destroying them, and of the need for their protection.—F. M. C.

Book News

In the October number of 'The Osprey,' the announcement is made that Dr. Gill,

the editor-in-chief, will hereafter be assisted by the following associate editors: Robert Ridgway, Leonhard Stejenger, Frederic A. Lucas, Charles W. Richmond, Paul Bartsch, William Palmer, Harry C. Oberholser, and Witmer Stone. Surely here is "a multitude of counsellors" whose co-operation is an assurance that 'The Osprey' will not only return to its former high plane, but will doubtless reach a level of excellence before unknown. We note with pleasure that the somewhat too appropriate yellow cover, used during the preceding editorial administration, has been changed for one of BIRD-LORE'S hue.

FROM the announcement of the Massachusetts Audubon Society of the Audubon Calendar, issued by them for 1900, we quote the following: "The calendar consists of twelve large plates of exquisite drawings of birds, one for each month, reproduced in colors with all the spirit and fidelity of the original water-color paintings. Descriptive text of the birds on each plate. Frank M. Chapman, Olive Thorne Miller, Florence A. Merriam, Abbott Thayer, Mabel Osgood Wright, Wm. T. Davis, William Brewster, Ralph Hoffman, Bradford Torrey, M. A. Wilcox, Harriet E. Richards, H. E. Parkhurst, have contributed original paragraphs. Size 9½ by 12½ inches. In paper box. Price 75 cents. Address orders to Taber-Prang Art Company, Springfield, Mass."

THAT the editors of St. Nicholas realize the importance of developing childrens' interest in nature studies, is evidenced by the establishment in their magazine for 1900, of a department of 'Nature and Science.' It will be in charge of Mr. E. F. Bigelow, formerly editor of 'The Observer,' and now of 'Popular Science.'

LISTS of the birds of the Middle Gulf States are so few in number that bird students will welcome a fully annotated catalogue of the birds of Louisiana, by Prof. Geo. E. Beyer, of Tulane University, shortly to be published by the Society of Louisiana Naturalists.

Bird-Lore

A Bi-monthly Magazine
Devoted to the Study and Protection of Birds

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

Published by THE MACMILLAN COMPANY

Vol. 1 DECEMBER, 1899 No. 6

SUBSCRIPTION RATES.

Price in the United States, Canada, and Mexico, twenty cents a number, one dollar a year, postage paid.

Subscriptions may be sent to the Publishers, at Englewood, New Jersey, or 66 Fifth avenue, New York City.

Price in all countries in the International Postal Union, twenty-five cents a number, one dollar and a quarter a year, postage paid. Foreign agents, MACMILLAN AND COMPANY, LTD., London.

Manuscripts for publication, books, etc., for review, should be sent to the Editor at Englewood, New Jersey.

Advertisements should be sent to the Publishers at Englewood, New Jersey, or 66 Fifth avenue, New York City.

COPYRIGHTED, 1899, BY FRANK M. CHAPMAN.

Bird-Lore's Motto:

A Bird in the Bush is Worth Two in the Hand.

WE have thus far avoided all mention of the financial side of the conducting of BIRD-LORE, nor do we now propose to adopt the course which circumstances, alas! have so often forced upon popular natural history journals, of turning the editorial page into a plea for subscriptions.

We trust, however, that in this concluding number of our first volume we may be permitted to make several statements in which we hope our subscribers will have a mutual interest.

In the first place, replying to the inquiry as to whether BIRD-LORE will not soon be issued at monthly instead of bi-monthly intervals, let us say that the management of BIRD-LORE is with us an avocation to which we can devote only the margin of time left from fully occupied days. To publish it each month would involve greatly increased labor, which, under the circumstances, we cannot assume, and we have attempted to bridge this difficulty by printing as much matter in each number as is ordinarily

contained in two numbers of any popular ornithological journal.

In the end, therefore, the subscriber receives quite as much for his money, and in support of this statement we may be pardoned for calling attention to the fact that the present volume of BIRD-LORE contains some 200 pages of text with over 70 illustrations, more, we believe, than is offered by any other bird magazine for the sum of one dollar.

To continue with this unpleasant subject: being perfectly familiar with the sad fate which has befallen so many of our predecessors—and of which when this journal was in contemplation our friends rarely failed to remind us!—we did not establish BIRD-LORE as a money making enterprise, but as a means of popularizing a study, the advancement of which is foremost in our desires, and as an aid to the cause of the Audubon Societies.

We believe, therefore, we may venture to say, that our relations with our subscribers are of a wholly different and more intimate nature than those which exist between the publishers and purchasers of magazines which yield an adequate money return for labor expended.

We have common interests to the furtherance of which we, for our part, are willing to devote no little time and thought, as we trust is shown by our announcements for 1900. To properly carry out our plans, however, it will be necessary to increase the size of BIRD-LORE, a step not as yet warranted by our subscription list. We would, therefore, ask the coöperation of every reader who has at heart the interests of bird study and bird protection. This coöperation may be shown in one or both of two ways: First, you may aid in increasing BIRD-LORE'S circulation by securing new subscribers, by presenting a year's subscription as a Christmas gift to some friend who is interested, or whom you want to interest in birds, or by suggesting this course to others. Second, you may assist us by promptly renewing

your subscription when it expires, or in the event of your not caring to re-subscribe, we ask, as a means of regulating our edition, that you kindly send us a postal to that effect.

Bird-Lore for 1900

BIRD-LORE for 1900 will, we think, reach a standard of excellence not before attained by a journal of popular ornithology. No effort has been spared to secure authoritative articles of interest to the general reader, as well as those of practical value to the teacher and student.

There will be papers by John Burroughs, recording the rarer birds he has observed about his home; by Bradford Torrey, describing his methods of attracting winter birds; by Robert Ridgway, on song birds in Europe and America; by Otto Widmann, on a visit to Audubon's birthplace; and also contributions from William Brewster, E. A. Mearns, C. Hart Merriam, T. S. Roberts, and other well-known ornithologists.

A VALUABLE contribution to the study of bird migration will be a paper by Captain Reynaud, in charge of the Homing Pigeon Service of the French Army, who will write of his experiments in this branch of the service.

ATTENTION will be paid to the bird-life of countries made prominent by recent events: L. M. McCormick, who has lately returned from the Philippines, writing of the birds of Luzon; H. W. Henshaw, of the birds of Hawaii, where he has long been a resident; Tappan Adney, who passed a year in the Klondike, of the birds of that region; and F. M. Chapman, of the birds of Cuba.

A. J. CAMPBELL, the authority on Australian birds, will also contribute a paper on foreign birds, describing the remarkable habits of the Bower Birds, with photographs of their bowers from nature.

FOR teachers there will be a series of suggestive articles on methods of teach-

ing ornithology, by Olive Thorne Miller; Florence A. Merriam; Marion C. Hubbard, of Wellesley; Lynds Jones, of Oberlin, and others, who have made a specialty of instruction in this branch of nature study.

STUDENTS will be glad to avail themselves of the assistance offered by BIRD-LORE'S Advisory Council, a new idea in self-educational work, the details of which are announced on another page. Among papers designed more especially for students will be Ernest Seton-Thompson's 'How to Know the Hawks and Owls,' illustrated by the author, F. A. Lucas' 'Tongues of Birds,' also illustrated by the author, and Professor Pinchot's 'A Method of Recording Observations.'

A PAPER of unusual value to those who study birds with the aid of a camera will be by John Rowley, of the American Museum of Natural History, who will describe a recently invented camera which opens new fields in bird photography.

FOR 'Young Observers' there will be articles by other young observers, and poems and jingles all designed to arouse and stimulate the child's interest in birds.

THE illustrations will, if possible, be of even higher quality than those for which already BIRD-LORE has become distinguished.

THE Audubon Department, under Mrs. Wright's care, will, as heretofore, print reports of the great work which is being done in the interests of bird study and bird protection, and the series of helpful articles by its Editor will be continued.

THIS outline of the leading features of BIRD-LORE for the coming year will, we trust, be deemed sufficient warrant for the belief expressed in our opening sentence. It will be seen that our difficulty is not lack of material, but lack of space, and this difficulty we hope our subscribers will help us to overcome by seconding our efforts in their behalf.

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 (President of the Audubon Society of the State of Connecticut), Fairfield, Conn., to whom all communications relating to the work of the Audubon and other Bird Protective Societies should be addressed. 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.

New Hampshire.....	MRS. F. W. BATCHELDER, Manchester.
Massachusetts.....	MISS HARRIET E. RICHARDS, care Boston Society of Natural History, Boston.
Rhode Island.....	MRS. H. T. GRANT, JR., 187 Bowen street, Providence.
Connecticut.....	MRS. WILLIAM BROWN GLOVER, Fairfield.
New York.....	MISS EMMA H. LOCKWOOD, 243 West Seventy-fifth street, New York City.
New Jersey.....	MISS ANNA HAVILAND, 53 Sandford Ave., Plainfield, N. J.
Pennsylvania.....	MRS. EDWARD ROBINS, 114 South Twenty-first street, Philadelphia.
District of Columbia.....	MRS. JOHN DEWHURST PATTEN, 3033 P street, Washington.
Wheeling, W. Va. (branch of Pa. Society).....	ELIZABETH I. CUMMINS, 1314 Chapline street, Wheeling.
Ohio.....	MISS CLARA RUSSELL, 903 Paradrôme street, Cincinnati.
Indiana.....	AMOS W. BUTLER, State House, Indianapolis.
Illinois.....	MISS MARY DRUMMOND, Wheaton.
Iowa.....	MISS NELLIE S. BOARD, Keokuk.
Wisconsin.....	MRS. GEORGE W. PECKHAM, 646 Marshall street, Milwaukee.
Minnesota.....	MRS. J. P. ELMER, 314 West Third street, St. Paul.
Tennessee.....	Mrs. C. C. CONNER, Ripley.
Texas.....	MISS CECILE SEIXAS, 2008 Thirty-ninth street, Galveston.
California.....	MRS. GEORGE S. GAV, Redlands.

The Law and the Bird

During the past ten months BIRD-LORE has printed interesting statistics concerning the organization of the various State Audubon Societies, as well as significant reports of the progress of their work. So far so good. There are, of course, slight differences in the platforms of these societies regarding by-laws, methods, fees versus no fees, etc. Upon one point, however, they all agree—that while they deplore the use of the feathers of wild birds in millinery, the great point is the education of children to have the proper regard for bird life.

It is, however, necessary to go a step behind even this. *A priori* the bird must be given a legal status before it can be protected with any general success, even by those most willing so to do. In appealing to the average child of the public school, it should be remembered of how many races this average child is compounded,—races with instincts concerning what are called the lower animals, quite beyond the moral com-

prehension of the animal-loving Anglo-Saxon. To make this average school child respect the rights of the bird, the bird must be given a legal status to command, and not to beg respect. This child may be appealed to in other ways and may readily assent to all that you say, *while your personal influence is with him*, but he goes away and forgets; he does not feel the weight of a merely moral penalty.

Game birds have this legal status, in a greater or less degree, in all states, with perhaps the single exception of Mississippi, and sportsmen are always on the alert for infringement of the game laws.

It would seem to me wise for Audubonites to turn more attention to the legal status of the class of birds that they specially seek to protect.

Legislation in this respect is, of course, difficult to obtain, because many sportsmen are afraid of weakening the game laws by stirring up discussion regarding song birds, etc.; but much more can be made of the existing laws. That

these are by no means adequately enforced, is evident to anyone who notices the hordes of men and boys prowling, these autumn days, about woods and meadows, where legitimate game birds are unknown, and Robins, Flickers, and even the smaller migrants are the only game. It makes one feel that the song bird protectionists must often "pass by on the other side," not having the honesty of their convictions in as militant a degree as the sportsmen, even when they have the law to back the bird.

It will doubtless be interesting to open these 'pages,' during the coming year, to a presentation and discussion of this legal status. We should like to receive the condensed bird laws of every state possessing such, as well as opinions as to what birds should be excluded from protection in the best interests of the Commonwealth, to the end that there may be a federation of Audubon Societies regarding the best method of obtaining legislation for the protection of desirable birds not covered by the game laws.

Be the roads many—illustrated lectures to arouse public sentiment, birdless bonnets, leaflets, thousands of pledge cards signed by ready sympathizers—the goal must be conservative, well thought out legislation, free from any taint of emotional insanity. If we are to keep the bird it must be by the aid of the law, the only voice that *must* be listened to, speaking the only language understood by all the races that go to make up the people of the United States.—M. O. W.

Reports from Societies

RHODE ISLAND SOCIETY

An exhibition of birdless hats—'Audubon-bonnets' as they have been facetiously styled—was held in the parlors of the Narragansett Hotel, in Providence, on the 9th of October. The response to the invitations, which were sent by the society to the leading milliners, was very gratifying, nearly all of them entering

cordially into the scheme. About one hundred and fifty hats were exhibited, and it is safe to say that such a beautiful and artistic display of millinery was never before seen in Providence. Most of the hats were especially designed for the occasion, and an endless variety of styles and trimmings was shown. The result proved conclusively that the plumage of wild birds can be easily discarded without violating the laws of fashion.

The exhibition had been well advertised and, in spite of unpleasant weather, the parlors were thronged with visitors throughout the day. Many sales were made, the proceeds going to the exhibitors.

Four ribbon prizes were awarded, but it is the opinion of the committee in charge that prizes, even of that nature, were a disadvantage.

The 'Providence News' thus comments upon the exhibition: "It was only the other day that the 'News' was moved to remark from the evidence of the fashion plates, that bird plumage was to be more than ever the fashion this season. But there is evidence that the protest against it is a mighty one, and if the birds in other communities have supporters of the number and character that they find here in Rhode Island, the milliners who oppose the sentiment of the Audubons will at no early day be compelled to reform or to go out of business."

ANNIE M. GRANT, *Sec'y.*

PENNSYLVANIA SOCIETY

During the year that has followed the issuing of our second annual report the Society has spread to nearly every county in the State. The membership has grown from 3,300 to 5,000, and a steady increase of interest is shown in the letters received by the secretary.

Bird-Day was most successfully observed in a large number of schools, and both teachers and pupils seemed well pleased with the results. We owe thanks to many of our local secretaries for their good work among children, and for the

classes for bird study which they formed during the summer. This is a movement of the utmost importance, as with increasing membership it becomes more and more difficult for the secretary to conduct individual correspondence, and everyone who will band together local members and act as local secretary, will further the interests of the Society more than can be done in any other way.

We would like to call the attention of our members to the following :

1. When this Society was organized the quills used in millinery were all taken from large domestic birds. Lately the Brown Pelican, Eagles, Owls, and Turkey Vulture have been made to pay tribute to the fashions; and we wish most earnestly to protest against the use of these quills. A good illustration of the feathers to be avoided will be found in the October number of *BIRD-LORE*.

2. We would also call attention to the fact that this magazine is the official organ of the Audubon Societies, and is essential to anyone desiring to keep up with what is being done for the protection of birds.

3. As heretofore, we are dependent almost entirely upon voluntary subscriptions for carrying on the objects of the organization, and we therefore appeal again for assistance from those interested in furthering the cause of the protection of birds. Increased funds will, of course, enable us to reach a larger number of persons, and to issue a larger amount of literature, for which there is a constant demand. Donations should be forwarded to the treasurer, Mr. William L. Baily, 421 Chestnut street, Philadelphia.

For the coming year we have in view the usual course of lectures, by Mr. Stone, and also the furthering of bird study in the schools, to which end we hope to issue some educational circulars.

JULIA STOCKTON ROBINS, *Sec'y.*

THE WISCONSIN SOCIETY

Our busy season is in the spring of the year. At about Easter time our

State Superintendent of Schools issued his 'Arbor and Bird-Day Annual,' which contained an invitation to teachers and children to join the Audubon Society. This invitation brought an almost overwhelming response, every day for several weeks bringing me ten or fifteen letters from would-be branches, and our school membership mounted rapidly to over 10,000. A prize offered to these children for the best personal observation on a Bird Family was won by a little country girl, who wrote a very good composition on the Ground Sparrow. We have tried, with varying degrees of success, in different places, to institute the work of the 'Bird Restorers' among these children.

We shall soon have a little library of bird books circulating among the schools, and we are trying to raise money for a set of lantern slides to accompany a lecture—lecture and slides to be sent from place to place.

I believe that the Audubon work has already made a deep impression in Wisconsin. The milliners' windows abound in Gulls and Birds of Paradise, but they are not finding a ready sale. As to wings, perhaps it is too much to expect that women will not believe their milliners when told that "These wings are all right, because they are made."

E. G. PECKHAM, *Sec'y.*

The Passing of the Tern

The surprising results which may follow Fashion's demand for a certain kind of bird have never been more clearly shown than in the case of the Terns or Sea Swallows of our Atlantic coasts.

Useless for food, the birds had escaped the demands of the hunter, and thousands nested in security along our beaches. The exquisite purity of their plumage and their unsurpassed gracefulness on the wing made them a particularly grateful element of the coast scenery to every lover of the beautiful, while to the prosaic fisherman they often gave welcome evidence of the direction of the land, as with unerring flight they

returned through the densest fogs, bearing food to their young.

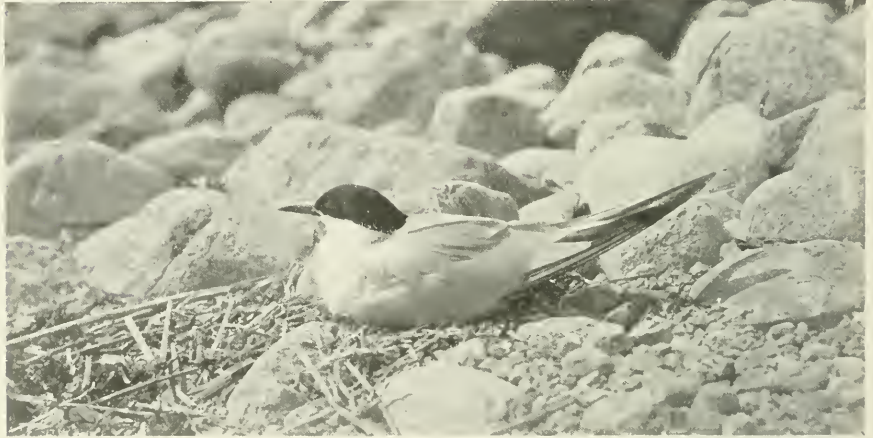
Suddenly, as a result of causes too mysterious for the mind of man to comprehend, Fashion claimed the Terns for her own.

Up and down the coast word went forth, that Sea Swallows, or 'Summer Gulls,' were worth ten cents each, and the milliner's agent was there to confirm the report.

It was in June when the baymen were idle and, unrestrained by law, they hastened to the beaches in keen compe-

succumbed had not bird-lovers raised a sum to pay keepers to protect them.

Then Fashion, as if content with the destruction she had wrought, found fresh victims, and the Terns, for a time, escaped persecution. Now, however, the demand for them has been revived, and again the milliners' agent is abroad placing a price on the comparatively few birds remaining. Before me is a circular issued by a New York feather dealer, asking for "large quantities" of "Sea Gulls, Wilson's Turns (*sic*), Laughing Gulls, Royal Gulls," etc., and this is



Photographed from nature by F. M. Chapman
WILSON'S TERN ON NEST

tion to destroy the birds which were nesting there

Never, in this country, at least, has there been such a slaughter of birds. A Cobb's Island, Virginia, bayman, whose conscience, even at this late date, urged him to a confession of shame for his part in the proceedings, told me recently that in a single day of that memorable season, 1,400 Terns were killed on Cobb's Island alone, and 40,000 are said to have been there shot during the summer. The destruction at other favorable places was proportionately great.

Two seasons of this work were sufficient to sweep the Terns from all their more accessible resorts, the only survivors being residents of a few uninhabited islands. Even here they would have

only one instance among hundreds. In fact, the feather merchants themselves state that the demand for Terns and Gulls exceeds the supply.*

What will be the result? Is there no appeal from Fashion's decree? Woman alone can answer these questions, and the case is so clear she cannot shirk the responsibility of replying.

Aigrettes are decorative, quills difficult to identify, neither bespeak death, and ignorance may lead the most humane woman into wearing either. But with the Tern no such excuse exists, and the woman who places its always disgustingly mutilated body on her bonnet, does so in deliberate defiance of the laws of humanity and good taste.

FRANK M. CHAPMAN.

*See also note from 'Brooklyn Eagle' on page 198.

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



VOLUME II—1900

THE MACMILLAN COMPANY
HARRISBURG, PA., AND NEW YORK CITY

COPYRIGHT, 1900
BY FRANK M. CHAPMAN

INDEX TO ARTICLES IN VOLUME II

BY AUTHORS

- Anthony, Emilia C., Hawk and Robin, 26.
- Bailey, Florence Merriam, How to Conduct Field Classes, 83.
- Bailey, Vernon, Where the Grebe Skins Come From, 34.
- Baily, W. L., The Kingfisher's Home Life, 76; Photographs by, 76, 77, 78, 79.
- Beck, H. M., A Blue Jay Tragedy, 195.
- Beebe, C. William, A Pair of Canadian Climbers, 27; Photographs by, 27.
- Brewster, William, A Study of a Lincoln's Sparrow, 109.
- Britton, Elizabeth G., Blue-winged Warbler in Southern New York in January, 26.
- Campbell, A. J., The Bower-birds of Australia, 135.
- Chapman, Frank M., Obituary Notice of Elliott Coues, 3; A Note on the Economic Value of Gulls, 10; The Season's Flight of Crossbills, 25, 59; Bird Photography at A. O. U., 26; An Interesting Nest, 60; Bird Slaughter in Delaware; The Hoar Bill, 60; An Interesting Record, 158; Bird-nesting in Winter, 194; Birds and Seasons; December and January Bird-Life near New York City, 183; Suggestions for the Months' Study, 190; Suggestions for the Months' Reading, 191; A Christmas Bird-Census, 192; The Destruction of Ptarmigan for Millinery Purposes, 204; Editorials by, 30, 31, 62, 93, 127, 161; Photographs by, 10, 11, 122; Reviews by, 28, 29, 61, 91, 92, 123, 124, 125, 126, 159, 160.
- Cherrie, George K., The Egret Hunters of Venezuela, 50.
- Coxe, Mrs. Clara J. See Reynaud, Gabriel.
- Crockett, Ingram, Sec'y, Report of, 97.
- Denwood, John, Two Notes from the Berkshires, 59.
- Dibble, Edmund B., Two Notes by "A Young Observer," 117.
- Dommerich, Mrs. L. F., Sec'y, Report of, 36.
- Drummond, Mary, Sec'y, Report of, 65.
- Dutcher, William, The Bird Protection Fund, 60, 90; Review by, 92.
- Dwight, Jonathan, Jr., M.D., How Ptarmigans Molt, 175.
- Figgins, J. D., Photograph by, 25.
- Ganier, Albert, Nesting of the Prothonotary Warbler, 89.
- Gault, Benjamin T., December and January Bird-Life at Glen Ellyn (near Chicago), Illinois, 187.
- Glover, Mrs. W. B., Sec'y, Report of, 165.
- Grant, Annie M., Sec'y, Reports of, 130, 164.
- Hastings, Harriet H., Report of, 132.
- Hathaway, H. S., A Home Loving Osprey, 89.
- Hegner, R. W., Photographs by, 122, 150.
- Hilles, Mrs. William S., Sec'y, Report of, 95.
- Hoffmann, Ralph, December and January Bird-Life near Boston, 182.
- Horton, Mrs. Wm. C., Early Breeding of the Pine Siskin, 118.
- Hubbard, Marion E., Bird Work at Wellesley, 52.
- Hutchins, John, The House Wren as a Depredator, 89.
- Ives, Ella Gilbert, A Yonkers Robin, 119.
- Jones, Lynds, On Methods in Teaching Ornithology at Oberlin College, 14; Spring Migration at Oberlin, O., 57; December and January Bird-Life at Oberlin, O., 186.
- Keeler, Charles, December and January Bird-Life on Eastern Side of San Francisco Bay, 185.
- Kellogg, Chas. D., Cowbird in a Dove's Nest, 121.
- Lemmon, Isabella McC., Notes on the Food of the Chickadee and Screech Owl, 59.
- LeSouëf, D., Photograph by, 136.
- Lucas, Frederic A., Concerning Birds' Tongues, 5.
- Mearns, E. A., The Newport Robin, 118.
- Miller, Olive Thorne, The Study of Birds—Another Way, 151.
- Milliners' Proposed Agreement, 98.
- Montgomery, Thos. H., Jr., The Bird Course at the Marine Biological Laboratory, Woods Holl, during the Summer of 1900, 153.
- Moore, Willie H., Notes on the American Golden-Eye, 157.
- Nash, H. W., Photograph by, 168.
- Nelson, Mrs. Henry W., A Pair of Killdeer, 148.
- Newkirk, Garrett, The Wise Old Crow, 158.
- Nightingale, Nina, My Exploit With a Crossbill, 181.
- Noble, Floyd C., Note on the Blue-winged Warbler in New York City in Winter, 59.
- Page, Laura G., Swallows and Feathers, 81.
- Palmer, T. S., Protest Against the Collection of Plume Birds Through Postmasters, 66.
- Patten, J. M., Sec'y, Report of, 203.
- Peabody, P. B., How a Marsh Hawk Grows, 43; Photographs by, 43, 45, 46, 48, 49, 75.
- Peckham, Elizabeth Gifford, Secretary's report of, 132.
- Peebles, Robert R., Photograph by, 116.
- Pennock, A. J., Photographs by, 108, 140.

- Princehorn, A. L., Photographing a Robin, 41; Photographs by, 41, 42, 182.
- Pynchon, W. H. C., Every-Day Study of Birds for Busy People, Including a Method of Recording Observations, 19.
- Reynaud, Capt. Gabriel, The Orientation of Birds, 101, 141.
- Ridgway, Robert, Song Birds in Europe and America, 69.
- Rogers, Charles H., The Notes of the Crow, 26.
- Roosevelt, Theodore, Letter from, 98.
- Rowley, John, A New Camera for Bird Photographers, 38.
- Sage, John H., Spring Migration at Portland, Conn., 56.
- Seton-Thompson, Ernest, The Origin of Dick-Cissel, 88; Verse by, 166.
- Shaw, J. Holbrook, M.D., An Oriole Tragedy, 118.
- Soule, Caroline G., A Philanthropic Sparrow, 26; A Hummingbird Experiment, 158.
- St. John, Morgan, February Birds, 23.
- Stern, Louis, Postal Card sent by, 66.
- Stone, Witmer, The Question of Fees, 95; December and January Bird-Life Near Philadelphia, 184.
- Tabor, E. G., Photograph by, 68.
- Taylor, John W., President, report of, 97.
- Thayer, Abbott H. (and others), An Appeal to Bird-Lovers, 33.
- Torrey, Bradford, Winter Pensioners, 177.
- Van Sant, Florence A., The Rev. Mr. Chickadee, D.D., 193.
- Warren, E. R., Photographing Ptarmigan, 170.
- Warren, Harry S., The Birds That Pass in the Night, 113.
- Webster, Ellen E., Feeding a Shrike, 195.
- Wetmore, Alick, My Experience With a Red-headed Woodpecker, 155.
- Whipple, Bishop H. B., Letter from, 97.
- Williston, S. W., Photograph by, 100.
- Woodworth, Nelly Hart, An Albino Robin, 120.
- W[right], Mabel Osgood, Editorials by 32, 63, 95, 128, 163, 201.

INDEX TO VOLUME II

- Advisory Council, 12, 182.
- Africa, 174.
- Aigrette Farming, 31.
- Aigrettes, 166.
- Alaska, 197.
- Allen, J. A., 33, 127, 196.
- American Museum Journal, 160.
- American Museum of Natural History, 121.
- American Ornithologists' Union, 94, 127, 154, 161, 162, 196, 198, 201.
- Arizona, 31.
- Ash, Charles E., 118.
- Attwater, H. P., 13.
- Audubon Bird Chart, noticed, 197.
- Audubon Conference, 202.
- Audubon, J. J., 29, 158.
- Audubon, Maria R., 158.
- Audubon Society, 94, 161, 163, 164, 166, 202.
- Auk, The, 126.
- Australia, 135.
- Bagg, Egbert, 13.
- Bailey, Florence Merriam, 151, 202.
- Baily, W. L., 60.
- Baird, Lucy H., 29.
- Baird, Spencer F., 29.
- Baldpate, 56.
- Barbour, E. H., 12.
- Barlow, C., 29.
- Barker, S. H., 6c.
- Barrows, W. B., 12.
- Bartsch, Paul, 12.
- Baskett, James Newton, 16.
- Batchelder and Fogg, Birds of Manchester, N. H., noticed, 126.
- Beal's 'Food of the Bobolink, Blackbirds and Grackles,' reviewed, 197.
- Beyer, George E., 12.
- Beyer's 'Avifauna of Louisiana,' reviewed, 125.
- Bicknell, E. P., 26.
- Bird-Census, 190, 191.
- Bird Chart, 163.
- Bird Club, 121.
- Bird Day, 90.
- Bird Destruction, 60.
- Bird Laws, 124, 128, 131.
- Bird-Lore, 30, 54, 200.
- Bird Nesting, 194.
- Bird Photography, 27.
- Bird Protection, 60, 90, 98, 126.
- Bird Students, 151.
- Bird Study, 52, 83, 87, 151, 153, 181.
- Birds, Attracting, 55.
- Birge, E. A., 129.
- Bishop's 'Birds of the Yukon Region,' reviewed, 197.
- Bittern, American, 56.
- Blackbird, Crow, 19, 72; Red-winged, 56, 57, 186, 187; Rusty, 56, 57, 187.
- Blatchley's 'Gleanings from Nature,' reviewed, 61.
- Bluebird, 57, 89, 184, 186, 187, 189.
- Bobolink, 46, 56, 57.
- Bob-White, 183, 184, 185, 186.
- Bonnet, A Remarkable, 166.
- Bower-Bird, Golden, 139; Spotted, 136; bower of, figured, 134.
- Bower-Birds, 135.
- Boys, collecting, 57.
- Brewster, William, 12, 25, 33, 129, 196.
- Brimley, H. H., 25.
- British Islands, 69.

- British Ornithologists, 126.
 Brown, Elizabeth V., 203.
 Brown, Herbert, 12, 31.
 Buffle-head, 56.
 Bunting, Indigo, 57.
 Burns, 'Monograph of the Flicker' reviewed, 125.
 Burroughs, John, 83.
 Bush Tit, California, 188.
 Butler, A. W., 12.
 Buzzard, Turkey, 72.
- California, 28, 29, 34, 92, 162, 188.
 Camera, 37, 90; figured, 38, 39.
 Cardinal, 72, 74, 184, 185, 186.
 Carroll, J. J., 13.
 Catbird, 57, 70, 72, 74, 75; figured, 108.
 Chaffinch, 69.
 Chamberlain, Montague, 13.
 Chapman, Frank M., 12, 13, 14, 20, 33, 131, 154, 202.
 Chapman's 'Bird Studies with a Camera' reviewed, 92.
 Chat, Yellow-breasted, 57, 72, 73, 74.
 Chickadee, 19, 24, 59, 177, 178, 180, 185, 186, 187, 190, 193; tongue of, figured, 7; figured, 178, 182, 193.
 Chickadee, Carolina, 186.
 Chewink, 72.
 Childs, John Lewis, 92.
 Clark, J. N., 25.
 Coggins, Herbert, 153.
 Cole, Leon J., 153.
 Colorado, 168, 169.
 Coloration, Protective, 169.
 Condor, The, 29.
 Connecticut, 19, 25, 56, 59, 89, 165.
 Cooke, W. W., 12.
 Cooper Ornithological Club, 29, 162.
 Coot, American, 56.
 Cormorants, tongue of, 8.
 Cory, C. B., 13.
 Cote, movable pigeon, 143.
 Coues, Elliott, obituary notice and portrait of, 3.
 Cowbird, 56, 57, 186, 187; figured, 121.
 Crane, small blue, 66; large blue, 66.
 Creeper, Brown, 27, 86, 183, 184, 185, 186, 187; figured, 27.
 Crossbill, Red, 25, 59, 184, 185, 186, 190; figured, 25.
 Crossbill, White-winged, 25, 59, 177, 184, 185, 186, 190.
 Crow, 19, 20, 21, 23, 26, 57, 72, 183, 184, 185, 186.
 Crow, Fish, 72, 184.
 Cuckoo, Black-billed, 56, 57.
 Cuckoo, Yellow-billed, 56, 57.
- Dabchick, 34; nest of, figured, 91.
 Dearborn, N. H., 154.
 Delaware, 60, 95.
 Delaware Valley Ornithological Club, Abstract of Proceedings of, review, 159.
 Dickcissel, 74, 88.
 Direction, Sense of, 102.
 District of Columbia, 25, 162.
 Dommerich, Mrs. C. F., death of, 204.
 Doughty, Assemblyman, 62.
 Dove, 56, 57, 72, 74, 185, 186, 19; Nest of, figured, 121.
 Doves, Carrier, 102.
 Duck, Black, 56; Harlequin, 158; Ring-necked, tongue of, figured, 5; Wood, 56.
 Dugmore's 'Bird Homes,' reviewed, 123.
 Dutcher, William, 13, 33, 93, 196.
- Eagle, Bald, 56, 184, 186; Golden, 186.
 Eaton, E. H., 13.
 Ear, semi-circular tubes of, 141, 147.
 Eckstorm, Fanny Hardy, 160.
 Economic Value of Birds, 190.
 Eggs, Motion of While Hatching, 143.
 Egret, 50, 66; figured, 51.
 Egret, Brown, 66.
 Ells, G. P., 59.
 Elrod, M. J., 12.
 Emerson, Edward Waldo, 196.
 England, 70.
 Europe, 70.
- Fannin, John, 13.
 Farallone Islands, 29. [159.
 Farr's Check-list of New York Birds, reviewed,
 Faxon and Hoffmann's 'Birds of Berkshire County, Mass.,' reviewed, 61.
 Fees, 63, 93, 94.
 Field-classes, 83.
 Field, G. W., 131.
 Finch, Pine, 183, 184, 185, 186, 189.
 Finch, Purple, 56, 183, 184, 185, 186.
 Fisher, A. K., 12, 13, 25, 33, 60.
 Fleming, J. H., 13.
 Flicker, 56, 72, 183, 184, 186, 187; figured, 112; head and tongue of, figured, 5; Red-Shafted, 188.
 Florida, 29, 66, 95.
 Flycatcher, Crested, 56, 57, 72; Least, 56, 57; figured, 75; Traill's, 57.
 Food and Distribution, 190.
 France, 101.
 Friar Bird, Australian, tongue of, figured, 7.
- Gault, B. F., 12.
 Gaut, Jas. H., 25.
 Geese, Wild, figured, 36.
 Gnatcatcher, Blue Gray, 57.
 Golden-Eye, American, 56, 157, 183.
 Goldfinch, Arkansas, 188.
 Goldfinch, American, 72, 74, 115, 183, 184, 185, 186, 187; tongue of, figured, 6; European, 184; Western, 189.
 Goose, Canada, 56, 57, 186, 187.
 Goshawk, 184, 185, 186.
 Grackle, Bronzed, 57, 186; figured, 150; Purple, 56, 186.
 Grebe, 66, 127; Eared, 34; Holboell's, 56; Horned, 56, 186; Pied-Billed, 56, 57; Western, 34.
 Grosbeak, 66; Evening, 187, 189, 190; Rose-Breasted, 56, 57; Pine, 27, 183, 184, 185, 190.
 Grouse, Ruffed, 23, 183, 184, 185, 187; figured, 68; Pinnated, 47.
 Gull, Black-Backed, 11; Herring, 11, 66, 183, 184, 185, 186; figured, 11; Iceland, 186; Kittiwake, figured, 10; Laughing, 66; Storm, 66.
 Gulls, 10, 11, 62, 90, 127, 203.

- Hall, A. C., 22.
 Hallock, Assemblyman, 31, 93.
 Hallock Bill, 31, 62.
 Harvey, L. D., 1132.
 Hawk, Broad-Winged, 56, 184, 185, 186; Cooper's, 56, 184, 185, 186, 187; Desert Sparrow, 189; Duck, 184, 185; Ferruginous, figured, 168; Marsh, 43, 56; figured, 43, 45, 46, 48, 49, 185, 186; Pigeon, 56, 185, 186; Red-Tailed, 185, 186, 187; Red-Shouldered, 183, 184, 185, 186, 187; Rough-Legged, 184, 185, 186; Sharp-Shinned, 26, 56, 184, 185, 186; Sparrow, 184, 186, 185; Western Red-Tail, 189.
 Hen, Prairie, 187.
 Henning, Carl Fritz, 126.
 Heron, Black-Crowned Night, 56, 66; Great Blue, 56, 57, 185; Green, 56; Snowy, figured, 51; White, 66.
 Herrick, F. H., 153.
 Hoar Bill, 31, 60, 124.
 Hoffmann, Ralph, 163, 197, 202.
 Honey Creeper, American, tongue of, figured, 7.
 Honey-Sucker, Australian, tongue of, figured, 7.
 Honey-Suckers, tongues of, 6, 7.
 Hornaday's Guide to N. Y. Zoölogical Garden, mentioned, 29.
 Howe, R. Heber, Jr., 126.
 Hudson, W. H., 170.
 Hummingbird, 72; Anna's, 188; Ruby-throated, 56, 57, 158.
 Hummingbirds, tongues of, 7, 8.
 Hyoid, 8.
 Ibis, 126.
 Illinois, 65, 74.
 Ingersoll, Ernest, 132.
 Ingersoll, Helen M., 123.
 Ingersoll's 'Nature's Calendar,' reviewed, 123.
 Indigo Bird, 72, 73, 74.
 Indiana, 74.
 Iowa, 126, 150.
 [188.
 Jay, Blue, 117, 179, 183, 184, 185, 186, 187; California, Jesurun, Mortimer, 13.
 Jones, Jenkin Lloyd, 65.
 Jones, Lynds, 13, 160.
 Jones, Marcus E., 13.
 Jones' 'Warblers' Songs,' reviewed, 124.
 Junco, 19, 86, 183, 184, 185, 187; Oregon, 189.
 Kearton's 'British Birds' Nests,' and 'Our Rarer British Breeding Birds,' reviewed, 91.
 Kearton, Richard, 160.
 Keeler, Charles A., 12.
 Keeler's 'Bird Notes Afield,' reviewed, 28.
 Killdeer, 57, 148, 186, 187; figured, 149.
 Kingbird, 56, 57.
 Kingfisher, 56, 57, 76, 186; figured, 76, 77, 78, 79.
 Kinglet, Ruby-crowned, 56, 57, 187, 189; Golden-crowned, 183, 184, 185, 186, 187; Western Golden-crowned, 189.
 Kirkwood, F. C., 12.
 Knight, O. W., 12.
 Kuowlton, F. H., 13.
 Lacey Bill, 93, 124, 126, 160.
 Lange's 'Our Native Birds,' reviewed, 28.
 Lantz, D. E., 12.
 Lark, Horned, 24, 56, 117, 183, 184, 185, 186, 187; Prairie Horned, 74, 185, 186.
 Lecture, circulating, 165, 166.
 Libby, O. G., 65.
 Longspur, Lapland, 184, 185, 186, 187, 191; figured, 190.
 Loomis' 'California Waterbirds,' reviewed, 92.
 Louisiana, 89, 125, 158.
 Maine, 60, 66.
 Macoun's Catalogue of Canadian Birds, reviewed, 125.
 MacSwain, John, 126.
 Mallard, 187.
 Martin, Purple, 56, 57.
 Maryland, 60.
 Massachusetts, 25, 52, 60, 61, 109, 118, 153, 158, 162, 182.
 Mayflower, 92.
 Maynard, Mrs. G. C., 203.
 Meadowlark, 19, 46, 56, 57, 74, 183, 184, 185, 186, 187. Western, 188.
 Mearns, E. A., 12.
 Membership in Audubon Societies, 64, 132.
 Merganser, Hooded, 56; Red-breasted, tongue of, figured, 5.
 Merriam's 'Results of a Biological Survey of Mt. Shasta,' California, reviewed, 28.
 Merriam, C. Hart, 12, 28, 33.
 Merrill, J. C., 12.
 Mellwraith, T., 13.
 Minnesota, 43.
 Michigan, 113, 126.
 Migration, 101, 107, 108, 113.
 Mrs. Miller's 'First Book of Birds,' School Edition, 160.
 Milliners' Proposition, 127, 128.
 Milliners' Trade Review, 160.
 Millinery Exhibit, 130.
 Millinery Merchants' Protective Association, 93, 98.
 Minot, C. S., 202.
 Mockingbird, 70, 74.
 Molt, The, 175.
 Morris, C. A., 60.
 Murphy, Eugene, 12, 13.
 Nash's Check-List of Ontario Birds, reviewed, 159.
 Nehrling, H., 13.
 Nelson, E. W., 13.
 New Brunswick, 157.
 New Hampshire, 80, 125.
 New Jersey, 25, 59, 60, 183, 185.
 New York, 10, 11, 26, 40, 41, 59, 60, 62, 112, 119, 120, 123, 148, 183.
 Nighthawk, 56; figured, 116.
 Nightingale, 70, 74.
 North Carolina, 25, 61.
 Nova Scotia, 27.
 Nuthatch, Red-breasted, 27, 180, 183, 184, 189; figured, 27; White-breasted, 177, 178, 183, 184, 185, 186, 187.

- Oberholtzer, H. C., 203.
 Oberlin College, 14.
 Ohio, 14, 56, 60, 186.
 Old-squaw, 56, 186.
 Ontario, 159.
 Oriole, orchard, 56, 57; Baltimore, 23, 56, 57, 74; nest of, figured, 118.
 Osprey, 56, 89; nest of, figured, 80.
 Ovenbird, 57, 72, 73, 74.
 Owl, Acadian, 184, 185; Barn, 66, 185, 186; Barred, 184, 185, 186, 187; Great Horned, 184, 185, 186; Hawk, 186; Long-eared, 184, 185, 186, 187; Screech, 59, 183, 184, 185, 186, 187; figured, 140; Short-eared, 56, 184, 185, 186, 187; Snowy, 184, 185, 186.
 Owls, 66.
- Palmer's (W.) 'Avifauna of the Pribilof Islands,' reviewed, 29.
 Palmer's (T. S.) 'Legislation for the Protection of Birds other than Gamebirds,' reviewed, 124; 'Review of Economic Ornithology,' reviewed, 159; 'Information Concerning Game,' reviewed, 107.
 Palmer, T. S., 126, 128, 196, 202, 203.
 Patagonia, 70.
 Pearson's 'Preliminary Catalogue of the Birds of Chapel Hill, N. C.,' reviewed, 61.
 Pearson, T. J., 13, 25.
 Pewee, hyoid of, figured, 8; Say's, 89; Wood, 56, 57, 72.
 Pelican, brown, 29.
 Penguin, tongue of, figured, 7.
 Pennsylvania, 60, 108, 121, 159, 184.
 Phoebe, 56, 57, 186.
 Photographs, alleged, from nature, 160.
 Pigeon, Black, Sea, 66; Carrier, 102, 145; figured, 103, 144; common, 142.
 Piers, Harry, 13.
 Pipit, American, 56, 185, 187, 189.
 Pledges, 63.
 Plover, Semipalmated, 57.
 Plumes, 50.
 Poppenheim, Christie H., 65.
 Porto Rico, 126.
 Postmasters and Plume-Birds, 66.
 Praeger's 'Birds in Horticulture,' reviewed, 61.
 Pratt, G. B., 126.
 Press Committee and Audubon Societies, 33.
 Pribilof Islands, 28.
 Prince Edward Island, 126.
 Ptarmigan, destruction of, 204.
 Ptarmigan Rock, 175; White-tailed, figured, 170, 171, 172, 173, 174; Willow, 175.
- Rathbun, W. C., 13.
 Reading, Suggestions for, 191.
 Redpoll, 177, 183, 184, 185, 186, 187.
 Redstart, 57.
 Regent-bird, 138; nest of, figured, 137; bower of, figured, 139.
 Reverse Scent, Law of, 106.
 Rhode Island, 89, 118, 126, 164.
 Richmond, C. W., 12.
 Ridgway, Robert, 12, 33.
- Rives, W. C., 13.
 Robin, 23, 24, 26, 41, 56, 57, 70, 72, 74, 75, 117, 118, 119, 120, 183, 186, 187; figured, 41, 42; Varied, 189; Western, 189.
 Robin, Redbreast, 69.
 Robinson, Francis B., 120.
 Roberts, T. S., 12.
 Russell, Miss Clara, 131.
- Sage, J. H., 12, 59.
 Sandpiper, Bartramian, 56, 57; Least, 57; Pectoral, 57; Solitary, 56, 57; Spotted, 56, 57.
 Sanford, Frank E., 65.
 Sapsucker, 56, 57, 186; tongue of, figured, 8.
 Satin-bird, 135; bower of, figured, 136.
 Savage, David L., 126.
 Seixas, Cecile, Death of, 166.
 Sense of Altitudes, 141.
 Sense of Direction, 141.
 Seton-Thompson, Ernest, 13.
 Shrike, California, 189; Loggerhead, 57; Northern, 183, 184, 185, 186, 187.
 Shutter, Focal Plane, 38.
 Siskin, Pine, 118.
 Skylark, 69.
 Smith College, 83.
 Smyth, W. A., 65.
 Snipe, Surf, 66; Wilson's, 56, 57.
 Snowflake, 183, 184, 185, 186.
 Solitaire, Townsend's, 189.
 Song-birds, American, 69; European, 69.
 South Carolina, 25, 65.
 Southwick, J. M., 13.
 Sparrow, Chipping, 26, 56, 57, 72, 82, 86, 90; English, 26, 54, 69, 71; Field, 56, 57, 72, 73, 74, 86, 185; Fox, 56, 57, 187; Gambel's, 189; Golden-crowned, 189; Grasshopper, 56, 57, 74; Henlaw's, 74; House, 183, 184, 185, 187; Ipswich, 184, 186; Lark, 74; Lincoln, 109, figured, 110; Samuel's Song, 188; Savanna, 56, 186; Sharp-tailed, 186; Song, 19, 24, 56, 72, 86, 183, 184, 185, 186; Swamp, 56, 57; Townsend, 189; Tree, 183, 184, 185, 186, 187; Vesper, 56, 57, 186; White-crowned, 57; White-throated, 56, 57, 184, 185, 186, 187.
 Starling, 184.
 Stern, Louis, 66.
 Stockwell, Thomas B., 130.
 Stone, Witmer, 12, 13, 29, 30, 33, 60, 93, 94.
 Strong, Isobel, 31.
 Study, Suggestions for, 190.
 Swallow, Bank, 56, 57, 82; Barn, 56, 57, 82; Cliff, 57; nests of, figured, 100; Eave, 82; Sea, 66; Tree, 56, 82.
 Swallows, tongues of, 6.
 Swift, Chimney, 56, 57, 72, 109.
 Swifts, Tongues of, 6.
- Tanager, Scarlet, 57, 83, 86; Summer, 72, 73.
 Teal, Green-winged, 56.
 Telescope, 113.
 Tern, Black-head Least, 66; Gray-headed Least, 66; Poster, 163, 164; Royal, 66.
 Terns, 60, 62, 90, 127.

- Texas, 66.
 Thompson, Maurice, 160.
 Thrasher, Brown, 56, 57, 72, 74.
 Thrush, Dwarf, 189; Gray-cheeked, 57, 74; Hermit, 56, 57, 186; Olive-backed, 57; Song, 74; Wilson's, 57; Wood, 57, 72, 74.
 Titmouse, Plain-crested, 188; Tufted, 74, 184, 185, 186.
 Todd, W. Clyde, 13.
 Towhee, 56, 57, 74, 187; California Brown, 188; Spurred, 188.
 Trinity College, 19.
 Tryon, Chas. C., 126.
 Turkey, Water, 66.
 Turnstone, 5.
 Van Name, Willard, 120.
 Venezuela, 50.
 Vermont, 118, 120.
 Vireo Bells, 74; Blue-headed, 56; Hutton's, 189; Red-eyed, 56, 57, 72, 73, 74; figured, 122; Warbling, 56, 57, 74; figured, 122; White-eyed, 57, 72, 74; Yellow-throated, 56, 57, 72.
 Virginia, 25, 60.
 Vulture, Turkey, 186.
 Warbler, Audubon's, 189; Bay-Breasted, 57; Black and White, 56, 57; Black and Yellow (Magnolia), 57; Blackburnian, 57; Blackpoll, 57; Black-throated Blue, 57; Black-throated Green, 56, 57; Blue-winged, 26, 57, 59; Brewster's, 57; Canadian, 57; Cape May, 57; Cerulean, 57; Connecticut, tongue of, figured, 7; Chestnut-sided, 57; Golden-winged, 57; Lutescent, 189; Mourning, 57; Myrtle, 56, 57, 183, 184, 186, 187, 190; Nashville, 57; Palm, 57; Parula, 57; Pine, 56; Prairie, 57, 72; Prothonotary, 89; Tennessee, 57; Wilson's, 57; Worm-eating, 57; Yellow, 57, 60; nest of, figured, 60; Yellow Palm, 56.
 Warblers, Tongues of, 5.
 Warner, Miss Ammie L., 131.
 Warren, H. S., 126.
 Washington, D. C., 60, 71, 72.
 Water-Thrush, 57; Louisiana, 56, 74.
 Waxwing, Cedar, 183, 184, 185, 186, 187, 189.
 Weed, C. M., 1, 3, 123.
 Wellesley College, 52.
 Western Ornithologists, 126.
 Whip-poor-will, 56.
 White-List, 163, 164.
 Whitman, Professor, 153.
 Widmann, O., 12.
 Willcox, M. A., 163.
 Williams, R. S., 26.
 Wilson, W. L., 11.
 Winkeuverder, H. A., 113.
 Wintle, E. D., 13.
 Wisconsin, 90, 155.
 Wolcott, R. H., 153.
 Woodcock, 56, 184, 185, 187.
 Woodpecker, California, 189; Downy, 19, 20, 21, 23, 178, 179, 180, 183, 184, 185, 186, 187; figured, 179; Gairdner's, 189; hairy, 183, 184, 185, 186, 187; tongue of, figured, 8; Lewis', 189; Red-bellied, 186; Red-breasted, 189; Red-headed, 155, 186, 187; tongues of, 8, 9.
 Woods Holl, 87.
 Woodward, Anthony, 160.
 Wren, Carolina, 72, 74, 184, 185; House, 56, 57, 72, 89; Long-billed Marsh, 57, 186; Short-billed Marsh, 186; Vigor's, 189; Winter, 184, 185, 186.
 Wren-Tit, 188.
 Wright, Mabel Osgood, 25, 202.
 Year 1900 in Ornithology, 199.
 Yellow-legs, Greater, 57.
 Yellow-throat, Maryland, 57, 72, 74.



Sincerely yours,
Ellis C. Cress

Bird = Lore

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

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. II

FEBRUARY, 1900

No. 1

Elliott Coues

WITH extreme regret we learn of the death of Dr. Elliott Coues, at Johns Hopkins Hospital, Baltimore, on Christmas Day, after a grave operation performed December 6. Dr. Coues died in the harness, as a more or less direct result from overwork, after a life of such phenomenal activity in the fields of science and literature that we have space for little more than an outline of his career.

Elliott Coues was born at Portsmouth, N. H., on September 9, 1842. In 1853 his family moved to Washington, D. C., where he was educated at the Jesuit Seminary and Columbian University, graduating from the latter in 1861 as A.B., and in 1863 as M.D. In this year he was appointed assistant surgeon in the United States Army and ordered to Arizona. After ten years' service at various posts he accepted, in 1873, the position of surgeon and naturalist of the United States Northern Boundary Survey from the Lake of the Woods to the Rocky mountains. After two years' field work he returned to Washington to prepare his report, on the completion of which, in 1876, he was made secretary and naturalist to the United States Geological and Geographical Survey of the Territories, a position he held for the ensuing four years, the period of his greatest scientific activity. In 1877 he was elected to fill the Chair of Anatomy in the National Medical College in Washington, a professorship he held for ten years.

In 1880 Dr. Coues was ordered to the western frontier, but he had become so deeply engaged in scientific work that he resigned from the army and returned to Washington, where he resided for the remainder of his life.

Doctor Coues' first contribution to ornithology was 'A Monograph of the Tringæ of North America,' a paper of thirty-five pages, published in the proceedings of the Philadelphia Academy of Sciences for

1861. The same volume contained his 'Notes on the Ornithology of Labrador,' gathered during a summer excursion in 1860.

These papers, written at the age of eighteen, might appear to-day, in spite of their author's youth and the great advances which have occurred in the science of ornithology, as creditable productions of an experienced ornithologist. Without attempting to present a list of the rapidly increasing number of Doctor Coues' ornithological papers, we may state that from 1861 to 1884 his contributions to the literature of ornithology numbered about 350 titles, including many extended papers and some eight separately published volumes.

The last named date concluded Doctor Coues' activity in ornithology for an interval of about twelve years, a period in which he was largely occupied with editorial work on the Century Dictionary, and with the production of fully annotated editions of the travels of Lewis and Clarke, Zebulon Pike, and other early explorers; but about 1895 Doctor Coues manifested a new interest in ornithology, and at that time began to prepare a third edition of his 'Key to North American Birds,' and it affords us great satisfaction to be able to say, on the authority of Mr. Dana Estes, the publisher of this work, that the manuscript was ready for the press several weeks before Dr. Coues' death.

Dr. Coues' influence in ornithology was first widely felt on the publication of his 'Key to North American Birds,' in 1872, which, as a popular and authoritative handbook, was replaced only by its second edition, a practically new work issued in 1884,* and differing from the current reprint only through the absence of certain appendices. Measured by results, this was Dr. Coues' most valuable contribution to the science of ornithology; the work of a great student and equally great teacher, made eloquent by its author's marvelous powers of expression. It is, beyond comparison, the best book on general and systematic ornithology ever published, and has contributed more to the advance of American ornithology than any other work since the time of Audubon.

Dr. Coues' distinguishing characteristic, as a man, was a virility of mind, which forced his powers to the utmost, resulting in his enormous productivity, and, eventually, his premature death.

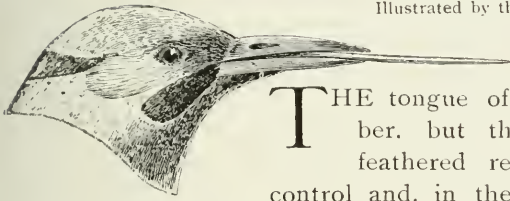
As an ornithologist, he was eminent as an anatomist, systematist, nomenclator, bibliographer, and biographer. Doubtless his peers exist in any of these branches of the science of birds, but one searches in vain for another individual who might claim to be his equal in all; and this deliberate estimate of his rank places Elliott Coues foremost among ornithologists. — F. M. C.

*The accompanying photograph of Dr. Coues was taken just prior to the publication of this work, and represents him in his prime.

Concerning Birds' Tongues

BY FREDERIC A. LUCAS

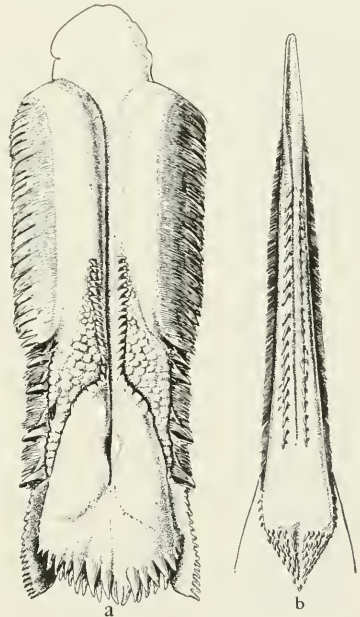
Curator of Comparative Anatomy, United States National Museum
Illustrated by the author



THE FLICKER

THE tongue of man may be an unruly member, but the tongues of his furred and feathered relatives are under much better control and, in the absence of hands, serve many useful purposes. Every one knows how the cat laps milk, washes her face and combs her hair, all with her tongue; every one has seen a Duck investigating a puddle, and some have seen a Flicker probing the depths of an ant-hill. It may have occurred to the observer that in each case there must be some device whereby the tongue is fitted for the work to be done, and it is plain that the tongue of the Duck should be quite different from that of the Woodpecker, since they are used for very different purposes. But unless one has actually investigated, he might not suspect how very unlike their tongues are, nor how complicated is that of the common Duck, being, as it is, a sort of combined rake and strainer. Neither, without some little study, would one suspect the many kinds of tongues found among birds and the curious modifications they present.

All, or nearly all, of these modifications probably have more or less to do with obtaining or manipulating food, although, to tell the truth, it has to be assumed that this is the case more from the apparent fitness of the organ for that purpose than from any actual observations on the subject. Not that every bird has a remarkable tongue, for the great majority of our small perchers have rather commonplace tongues adapted for general rather than special purposes, and therefore constructed on the same general plan. A tongue of this type is rather thin, slightly hollowed, and frayed out a little towards the tip, like the tongue of the Connecticut Warbler, which may be taken as the type of tongue possessed by the great majority of Warblers and



TONGUES OF RINGED-NECKED DUCK
(a), RED-BREADED MERGANSER (b).

small birds whose diet consists largely of insects. Strictly insectivorous birds, such as Swifts, Swallows and Goatsuckers, have a somewhat different tongue,—soft, fleshy, and beset, particularly about the base, with numerous small backwardly directed points, whose office is apparently to facilitate the downward career of food. That these birds, so different in structure, as birds go, and members of families so far apart in the bird world, should have similar tongues, seems to indicate that the shape of the tongue bears a relation to the character of the food, and gives no hint of corresponding relationship between the birds themselves.

The more exclusively granivorous birds have another style of tongue,—smooth, thick, fleshy and but little frayed at the tip,—a tongue which no doubt is useful for holding and husking minute seeds, while the little scoop-like tongues of Goldfinches and Crossbills must be still more serviceable for such purposes.



THE LITTLE
SCOOP OF THE
GOLDFINCH

The tongue of our common Goldfinch is furthermore beset about its edge with little hard points, and while these would add to its usefulness in gathering the fine seeds of thistles, yet, as thistles are only available for a part of the year, it is hardly probable that such a special modification is for such limited use, this being one of the cases where it is easier to make the theory fit part of the facts than it is to make the facts conform to the theory. My friend Mr. William Palmer has, however, offered a suggestion that seems to fit the case pretty well, calling attention to the fine, almost pasty condition of food found in the gullet of the Goldfinch, and suggesting that the small, hard points play a part in grinding up little seeds and reducing them to pulp.

If we go back to the simple tongue with which we started, stretch it out and feather it more deeply, we will have the pattern of tongue that prevails among the Orioles; or if we curve the thin edges upwards and inwards until they meet, we will have a little tube, such as is found among the Sunbirds and Honey-suckers. In order that such a tongue may really suck, it is, of course, necessary to create a vacuum at its back, and the muscles of the tongue are so arranged that this can be done, the back of the tongue being depressed, while the front or middle portion is in contact with the roof of the mouth. Some of the American Honey-creepers (*Certhia*), for example, have an interesting modification of this suctorial tongue, the front portion being deeply cleft and the thin edges split and rolled inward to form two hollow brushes. These may either dip up liquid, or draw it inward by capillary attraction, while they are

certainly useful for catching minute insects. The tongues of some of the Australian and Hawaiian Honey-suckers are even more complicated, ending in four little spiral brushes instead of two.



THE EVOLUTION OF THE BRUSHY TONGUE
a, Connecticut Warbler; *b*, Australian Honey-sucker;
c, American Honey-creepers; *d*, Australian Friar Bird;
e, Tip of Tongue of Honey-creepers

Still another kind of tubular tongue is found in the Ruby-throated Hummingbird, or, for that matter in all Hummingbirds so far examined, each half of the very long and very deeply cleft tongue being edged on the outer side with the thinnest imaginable membrane, which curls inward to form a delicate tube.

Now, since the Honey-creepers, the Honey-suckers and the Hummingbirds all have tubular tongues, it is natural to suppose that they use them for sucking the nectar of flowers, and yet, so far as actual knowledge goes, the food of these birds consists principally of minute insects and spiders, which goes to show that in matters pertaining to natural history a little observation is much better than a great deal of theory.

Theory may, perhaps, be right in ascribing the little pitchfork the Chickadee carries by way of a tongue to the fact that such a thing would be useful for prying insects and their eggs out of chinks in the bark of trees, but it is difficult even for theory to explain why some birds have just such tongues as they do: why, for example, the big-billed Toucan should have a tongue very much like a long, loose feather, or that of the Penguin should be made up of long spines. Perhaps when the habits of these birds are better known we may see the reasons for the shapes of their tongues, and the spiny



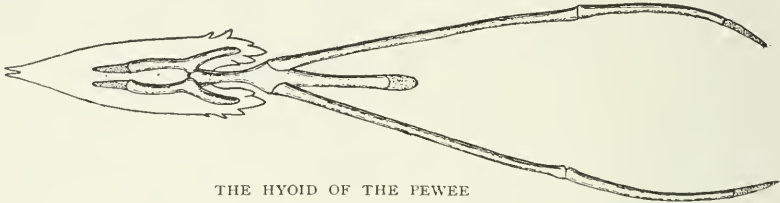
THE CHICKADEE'S
 FORK



THE PENGUIN'S
 RAKE

tongue of the Penguin may be very serviceable for catching or holding small crustaceans and fishes.

Before going farther it may be well to glance for a moment at the seven or eight little bones forming the hyoid, or framework on which the tongue is built, and to which are attached the muscles that move it. The two foremost of these little bones, often so closely



THE HYOID OF THE PEWEE

united as to appear one, are imbedded in the body of the tongue itself, together with the single bone to which they are attached, while the hindmost pair curl up around the back of the skull, and from the varying proportions of these bones we can tell something of the manner in which and extent to which the tongue is used. If the foremost bones are long the tongue is long, if they are stout the tongue is thick and fleshy, as in the Ducks, and if they are almost wanting, as in the Cormorants, then there is no tongue to speak of. The hindmost bones determine the extent to which the tongue can be protruded: if they are long the tongue is very extensible, if they are short it is but little so. In the Hummingbirds these epibranchials, as they are called, run back over the skull, meet one another, and extend forward side by side to the very base of the bill. It might be thought that this marked the utmost limit of length attainable, but some of the Woodpeckers manage to exceed this, sometimes, as in the Downy Woodpecker, by curling the ends of the



THE SPEAR OF THE HAIRY WOODPECKER



THE ARROW OF THE SOLOMON ISLANDER

hyoid around the right eyeball, and sometimes, as in the Flicker, by letting the bones run forward into the nostril and thence to the tip of the bill. The Woodpeckers thus obtain the longest and most extensible tongues found among birds, and, as these tongues are used

for spearing grubs in their burrows or coaxing ants out of their nests, the tips are peculiarly modified, as well as the hindmost part of the tongue. In such active grub-hunting birds as the Hairy and Downy Woodpeckers the tongue tip is made into a many-barbed spear, for all the world like the spears and arrows in use among the natives of the Solomon Islands.

The Flicker, on the other hand, which uses its tongue like a probe, has only one or two little barbs, at the very tip, and relies mainly on gluing ants and other small game to his tongue by the very viscid saliva secreted by the large salivary glands. All Woodpeckers, however, with which we are acquainted have the upper surface of the tongue thickly beset with minute, horny points, directed backward. The Sap-sucker has no barbs on the tip of the tongue, but instead a little brush; moreover, this bird has the shortest, least extensible tongue of all Woodpeckers, and must long ago have given up spearing grubs for a living. It is something of a question whether the little brush is used for swabbing up sap, or whether it serves to direct the sap from the little pits where it accumulates into the bird's mouth. The former use seems the most probable, as those who have watched the Sap-suckers closely tell us that the tongue is moved rapidly backward and forward.



THE BRUSH
OF THE
SAP-SUCKER

From what has just been said, it can readily be seen that among Woodpeckers, the relations between food and tongue are very clear, and we may be pretty sure that whenever we come upon an odd-appearing tongue there is, did we but know it, some trick of taking or manipulating food to account for it. And it is suggested that the readers of BIRD-LORE improve every opportunity to carefully observe the manner in which even the commonest birds take their food, in order to throw all possible light upon the reasons for the many shapes of birds' tongues.



A Note on the Economic Value of Gulls

BY FRANK M. CHAPMAN

With photographs from nature by the author

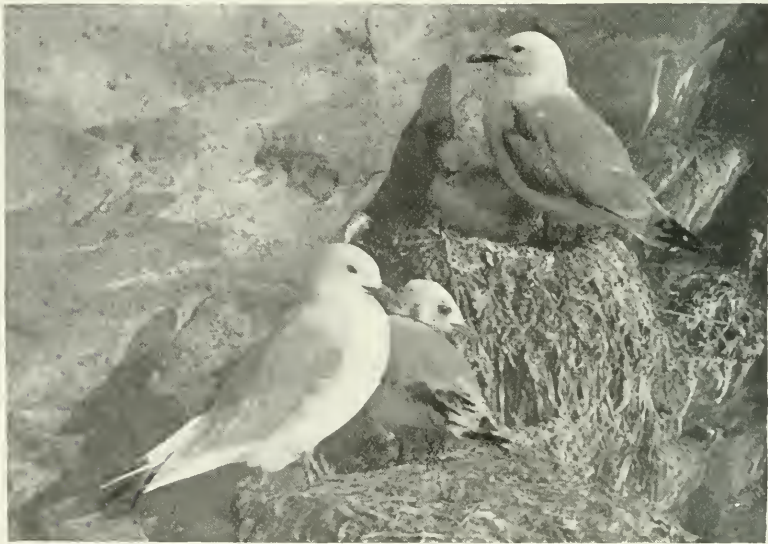


If the inhabitants of our Gulf States had believed that Egrets were as valuable to them alive, as they *know* Turkey Buzzards and Black Vultures to be, they would, doubtless, never have permitted their destruction.

Similarly, we think that if the services rendered by Gulls were fully appreciated, the birds would be protected by a sentiment as strong as that which preserves the Buzzards.

It is possible that the day may come when a bird's beauty will be a sufficient reason for its existence ; but in the meantime we must base our appeals for bird protection on more material grounds if we would hope to have them effectual.

In pleading the cause of the Gulls, therefore, we will not mention the accompanying picture of the birds with their young, beautiful as it is,



KITTIWAKES AND YOUNG ON NESTS

Bird Rock, Gulf St. Lawrence, July 26, 1898

for we realize that with the millinery collector it would only create a desire to visit a locality where Gulls are evidently so tame that they could be killed with ease ; but we would call particular attention to the apparently uninteresting photograph which follows it.

This photograph was made in the lower bay of New York harbor on

February 20, 1896, under conditions which prohibited technical success. It serves very well, however, to give an idea of the number of Gulls—Herring Gulls with a comparatively small number of Black-backs—which at that time were attracted to the vicinity by the refuse which each day at high tide was dumped upon the waters by the scows of the street-cleaning department. The Gulls had gathered to feed upon the animal and vegetable matter deposited. On this occasion eleven scows were dumping, and over the wake of each one fluttered a throng of birds similar to that shown in the picture.

No more impressive object lesson in the value of Gulls as scavengers could be imagined; and no one convinced of the services rendered



GULLS OVER WAKE OF GARBAGE SCOW IN LOWER NEW YORK BAY

by these birds throughout our coast-line and on many of the interior lakes and rivers, could, for a moment, doubt the importance of protecting them.

But in place of Gull protection we are having Gull destruction. Gulls, in whole or part, have become fashionable, and Gulls' wings, breasts, heads, bodies and entire skins are worn on hats in countless numbers.

It is stated that in a fire which destroyed the millinery taxidermist establishment of William L. Wilson, at Wantagh, L. I., on November 22, 1899, no less than 10,000 Gulls' skins were consumed; and these figures doubtless represent only a fraction of the number handled during the year.

If the birds remain fashionable the demand for them will, of course, be supplied, with a resulting loss to man which, perhaps, we may realize when it is too late.

For Teachers and Students

'Bird-Lore's' Advisory Council

THE plan for an 'Advisory Council,' announced in our last issue, is realized by the publication below of the names and addresses of the ornithologists who have consented to assist students by responding to their requests for information.

The list, as will be seen, contains the names of many of the leading ornithologists of the country, and in becoming a medium whereby their personal advice is made available to students, we feel that BIRD-LORE has rendered an invaluable service to the science of ornithology.—ED.

NAMES AND ADDRESSES OF MEMBERS OF THE ADVISORY COUNCIL

UNITED STATES AND TERRITORIES

- ALASKA.—Dr. C. Hart Merriam, Biological Survey, Department of Agriculture, Washington, D. C.
- ARIZONA, Northern.—Dr. E. A. Mearns, Fort Adams, Newport, R. I.
- ARIZONA, Southern.—Herbert Brown, Yuma, Ariz.
- CALIFORNIA.—Charles A. Keeler, Calif. Acad. Sciences, San Francisco, Calif.
- COLORADO.—Prof. W. W. Cooke, State Agricultural College, Fort Collins, Col.
- CONNECTICUT.—J. H. Sage, Portland, Conn.
- DELAWARE.—Witmer Stone, Academy Natural Sciences, Philadelphia, 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.
- GEORGIA.—Dr. Eugene Murphy, Augusta, Ga.
- IDAHO.—Dr. J. C. Merrill, Army Medical Museum, Washington, D. C.
- 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, Indianapo'is, Ind.
- INDIAN TERRITORY.—Prof. W. W. Cooke, State Agricultural College, Ft. Collins, Col.
- IOWA.—Paul Bartsch, U. S. National Museum, Washington, D. C.
- KANSAS.—Prof. D. E. Lantz, Chapman, 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. M. J. 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, Department of Agriculture, Washington, D. C.
 NEW YORK, Eastern.—Dr. A. K. Fisher, Biological Survey, Department of Agriculture, Washington, D. C.
 NEW YORK, Northern.—Egbert Bagg, 191 Genessee 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 CAROLINA.—Prof. T. J. Pearson, Guilford College, N. C.
 OHIO.—Prof. Lynds Jones, Oberlin College Oberlin, Ohio.
 OKLAHOMA.—Dr. A. K. Fisher, Biological Survey, Dep't of Agr., Washington, D. C.
 OREGON.—Dr. A. K. Fisher, Biological Survey, Dep't of Agr., Washington, D. C.
 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, San Antonio, Tex.
 TEXAS, Western.—Dr. E. A. Mearns, Fort Adams, Newport, R. I.
 UTAH.—Prof. Marcus E. Jones, Salt Lake City, Utah.
 VERMONT.—Dr. F. H. Knowlton, U. S. National Museum, Washington, D. C.
 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. Nehrling, Public Museum, Milwaukee, Wis.
 WYOMING.—Dr. Mortimer Jesurun, Douglas, Wyo.

CANADA

- BRITISH COLUMBIA.—John Fannin, Provincial Museum, Victoria, B. C.
 MANITOBA.—Ernest Seton-Thompson, 144 Fifth avenue, New York City.
 NEW BRUNSWICK.—Montague Chamberlain, Harvard University, Cambridge, Mass.
 NOVA SCOTIA.—Harry Piers, 'Stanyan,' Northwest Arm, Halifax, N. S.
 ONTARIO, Eastern.—James H. Fleming, Rush Road, Toronto, Ont.
 ONTARIO, Western.—T. McIlwraith, Hamilton, 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.

On Methods in Teaching Ornithology at Oberlin College

BY LYNDS JONES

Instructor in Zoölogy in Oberlin College



HIS article has not to do with ideal methods in teaching people about birds. Ideal methods presuppose ideal conditions, which cannot be expected if the subject be taught as a part of a large college curriculum and as a part of the teacher's work. The subjoined remarks will therefore be rather an explanation of the methods employed under the conditions named than as a statement of what the writer hopes that he may some time be able to realize.

There are taught, in Oberlin College, three courses in ornithology. The beginning course, which meets for recitation three times a week during the spring term, aims at a general introduction to the subject, with special stress laid upon field familiarity with a limited number of the more common local species as a basis for further study. The advanced course, with two meetings a week for recitation, undertakes economic and philosophic studies, which require original field work. A course is also offered in the summer school, which meets five times a week for eight weeks, designed for teachers and others who have little or no previous acquaintance with birds, but who desire to teach the subject to children. The methods employed in each of these courses may now be discussed separately.

Until the advent of Mr. Frank M. Chapman's 'Handbook' made the use of a text-book possible, the work in the beginning course was wholly given in lectures. With that book as a text for the systematic part of the work, a much larger opportunity for lectures upon habits and field characteristics was afforded.

This course is introduced by a brief history of ornithology and a statement of present day activities, showing where effort may be profitably directed. This brief history is followed by a careful scrutiny of the content of ornithology, indicating the bird's place in nature structurally, and its economic importance. After a brief notice of migration and distribution, the real subject is entered upon in the study of the orders as a basis for the study of species. A thorough drill upon the names and characteristics of each of the seventeen orders of North American birds is followed by a somewhat less rigorous drill upon the minor divisions of the orders as illustrated by the common local species of each, except the Passerine birds, which

are reserved for special study later. This drill upon mere names and characteristics is accompanied by the exhibition of specimens, by field study where possible, and by personal reminiscences of habits in general, but even then savors of mathematical formulæ, and is little to the taste of most students. One may ask why it might not then better be omitted. It is the drudgery of the subject, and must therefore come some time. Without a thorough knowledge of the orders, which form the most natural divisions of the whole class of birds, artificial keys and other helps would be well nigh out of the question. Experience has shown that this drill is the best preparation for the work that follows.

In the study of the Passerine group attention is concentrated upon habits and characteristics of the common local species of each family, using these species to illustrate and fix the family characteristics. In this study special stress is laid upon peculiarities of color, habits, environment and song, as aids to the determination of the species. Here field work is essential to any correct knowledge of the species, and much time and effort is expended in the field. This field work is the surest test of the student's ornithological ability and perseverance. Most students enter upon the work with a hazy picture or image of a generalized bird and with a few generalized bird-songs in mind, without the slightest conception of the largeness of the subject and of the training necessary before the panorama of passing forms and the medley of voices can be resolved into the individualities of the bird world. It is therefore a common experience for even the more able students to definitely decide, after the first few trips afield, that there is nothing in the subject for them! I am glad to put on record that in every case where the student has stuck to the work to the end he has come out of it an enthusiastic ornithologist. It must needs be so.

The field work begins during the first week of the term—about April 10—and continues to the end. As an aid to learning the names of the birds, each student keeps a 'day-book' of the work in which the vernacular names of the birds seen are correctly written, and a field-book in which the names of all the birds seen on the individual trips are written, this constituting the list for the day. This mechanical repetition of the names is a great help in fixing them in the memory.

The value of the field work to the individual student is in inverse ratio to the number of persons participating in any one trip, both on account of numbers and on account of divided attention. The difficulty can be partly overcome by divisions and subdivisions of the class to the limit of time and endurance of the

teacher, by the kindly aid of some self-sacrificing ornithological friend, and by encouraging individual work in the few who can profit by it. But even with all these aids it is a real difficulty, which grows with the class and with the growing interest of the public. We may be heartily glad that such difficulties arise now, indicating, as they do, that the time is approaching when the force of those capable of giving instruction will be sufficient to meet the demand.

During this term of study the field work is largely done during the early morning hours—4:30 to 6:30 A. M. It is not only the best time of the day to study birds, but is practically the only time available, with the other work which must be done. Either one forenoon or one afternoon each week is usually available for class field work, and this time is utilized by any who find the early morning work too debilitating. But it is a poor substitute. Better field work is done if the men and women do their work at separate times. Strange, but true! The teacher reserves two mornings out of the six for private field work in preparation for the class field work.

With such a limit of time made necessary by the sub-divisions of the class, field study taken alone could not accomplish the task of teaching the student many species. As a further aid, skins of about ninety species are identified by each student, with the book in hand. Here the importance of exactness in description of color, form and proportions are brought into prominence, and many wrong impressions corrected. The bird 'in hand' is a revelation of things unsuspected in the make-up of a bird. Some one will ask, Where did you get all those skins? They are a damaged lot that was about to be thrown away as unfit for the cabinet, but serve the purposes of identification admirably. Thus no demand was created for the slaughter of more birds. None have ever been killed to furnish skins for this work. The finished list of skins identified comprises the name of the order, family, genus, species, and sub-species, if such, and the vernacular name.

In the two-hour advanced course the student is introduced to the many problems which the subject affords, with suggestions of methods for their solution. Topics are assigned for special original work involving the use of literature as well as original field work, and the results obtained are presented to the class in a finished paper. The *Story of the Birds*, by James Newton Baskett, published by D. Appleton & Co., is used as a guide to the class-room work, supplemented by lectures and outside reading. Where possible each student studies the breeding habits of some one or more species by watching the process from the beginning of the nest to the time when the young

are able to leave it. Some attention is also given to the study of pterylosis and its bearing upon classification. While the field work is largely individual and independent of the teacher, the students are given just enough personal supervision to minimize mistakes in identification and observation.

The course offered in the summer school is arranged for 22 hours' work each week for the term of eight weeks, a large part of that time being spent in the field with the birds, the sole object of the field work being to acquaint the student with the more common local species by a system of comparisons of the different species. Hence, all field work must be done under the personal supervision of the teacher until each student has acquired a speaking acquaintance with at least thirty species, which requires rather more than two-thirds of the term for the majority of the class. At the close of this period the average student will be fairly familiar with fifty species, and the most apt with seventy, with twenty others on his list seen once or oftener.

Field work, without a rigid system of note keeping, would result in careless work and loss of time with a class of students. It is undoubtedly drudgery to most, if not all, but it cannot be avoided. There is a golden mean between packing the note-book and trying to pack the memory, but one could not expect the beginner to find it. During the first week of the summer study the note-book will grow rapidly with descriptions of pattern of colors, song, flight, habits, food, comparisons with other similar species, and anything else which will help in retaining the distinguishing features of the species, *written on the spot*, in a scratch book. At the close of the day these are copied into a permanent journal of the day, and the names of all the species seen are entered into a daily "check book"—a quadrille-ruled note-book dated at the top, with a line for weather, one for start and return, one for locality where the work was done. In the squares, on a level with the name of each species, and under the date, abbreviations are entered indicating where the species was seen (town, field, woods, pasture, roadside, pond or stream, etc.), about how many seen, whether singing or silent, whether molting or not. For a time the local geographical distribution of each species is given special attention, so that time may not be wasted in looking in impossible places for certain species.

During the last two weeks of the term of study, the students are expected to pursue their field work largely independent of the teacher for the purpose of developing an individual method of study. It is unfortunate that this part of the work must come at a time when molting is well under way, so that perplexing patterns of dress

are frequently met with, while few or imperfect songs are heard. But it is excellent drill!

The museum affords a perpetual refuge for the confused ones, and is often a great help in straightening out difficulties. Each bird seen in the field is exhibited before the class and comments made upon it. A part of the work of this term is recitation upon each of the species seen at any time during the term. This serves to bring to a focus one's mental picture of the species.

During favorable weather the field work is distributed over two mornings and two afternoons, and either a whole day excursion to some especially favored spot or a third afternoon. Four such all-day excursions are arranged during the term. The morning work occupies the two hours between 4:30 and 6:30 A. M., the afternoon work from 2:30 to 7:30 P. M. The four morning hours count for larger results numerically than the fifteen afternoon hours, but the contrast afforded is useful. The all-day excursions give the needed contrasts of the different hours of the whole day, while furnishing the means of comparing the fauna of fields and roadsides with woods and thickets. Streams, ponds and Lake Erie are visited, where many water frequenting species are seen.

At the last exercise of the class each student submits the results of the term's work in a paper, which gives the local geographical distribution of each species seen, representations or descriptions of the manner of flight, the food, the song, habits as far as noticed, and nests and eggs of such species as have been found nesting. All this is taken from the note-book, of course.

The total number of species seen by the class during this term's work exceeds 90. Of these fully 70 will be seen satisfactorily, giving opportunity for study. Individual field work will swell the list of species well seen just in the proportion that the field work is done with keen interest and discrimination. There is no better illustration than this term's work of what can be accomplished even in the heated term of summer. He who pursues the study of the birds at this time will be sure to meet with many pleasant surprises.



Every-Day Study of Birds for Busy People, Including a Method of Recording Observations

BY W. H. C. PYNCHON

Instructor in Natural History, Trinity College



HOW often you hear somebody say, "I would like very much to know something about birds, but I don't have time to make a study of them." It is to these would-be ornithologists that this little paper of suggestion is addressed by one who, during a great part of the year, has very little time to spare, but who, nevertheless, has made the acquaintance of a good many of our feathered friends.

I live in the city of Hartford, Conn., and my home is about a mile from Trinity College, where I have charge of the work in Natural History. Of course I have the summer vacation and a good many hours during the term which I can devote to the study of birds, but it is not of these times that I wish to speak, but of my busy days. I generally walk between my house and the college, through a part of the year at least. My way lies through old Zion Hill Cemetery, and if I choose to allow a few minutes more time, I can go through one or two new parks which are in almost my direct route. The college itself stands on a trap ridge, with open fields on three sides, those to the west being largely meadowland. As a result of all this, I am able to see a good many birds as I go back and forth and to acquire a bowing acquaintance with many of them at a very small outlay of time.

All winter long I hear the call of the Crows across the lowlands. All winter long Chickadees and occasional Kinglets spend their sunny days along the southern edge of the old cemetery. In early and late winter the Juncos flit from bush to bush, and after heavy snows the Meadowlarks come in, seeking food. To the high firs of the cemetery come the first Crow Blackbirds, and, a little later, the meadows west of the college are ringing with the notes of the Song Sparrow. So the birds come, one after another, to this single mile within the city limits till all the summer visitors are here. Slowly they leave in the autumn, till Zion Hill is again surrendered to the Crow, the Nuthatch, the Chickadee and the Downy Woodpecker.

When I first kept a daily record of the birds, I began it with the determination to spend upon it no time that belonged to my work—simply to make it an incidental in my every-day occupa-

tions, and though at times I have wavered in this path of virtue, still I have held to it for a great portion of the time in a fairly laudable manner. At first I kept the record in a laborious way of my own devising, but after sundry experiments I have reduced the method to a fairly practical basis. The method is an extension of that which Mr. Chapman gives in his 'Handbook of Birds,' and I take the liberty of giving it in full, in the hope that it may be of service to some one.

For the purpose I get a blank book of the kind usually sold under the name of 'Record,' with pages *ruled* and numbered; each page measuring about 8 x 10 inches. Page No. 1 I reserve for an index of abbreviations. Pages 2 and 3, which face each other, I rule off in the following manner: If the book is for the present year, I put at the top of page 2, "January, 1900." I then divide all of page No. 2, and the left hand half of page No. 3, into sixteen equal vertical columns, one for each of the first sixteen days of January. The right hand half of page No. 3 I leave for notes. Then I divide each of the sixteen columns by a fine line down the center. Next I hinge to the left-hand edge of page No. 2, a 'folder' of heavy paper about three inches wide and as long as the page. This can be folded into the book when not in use.

Now as to the method of use. Suppose that on the first day of January I saw no birds of any kind. I simply leave the first column of page No. 2, labeled at its top "Monday, 1st," blank. On Tuesday on my way to the college I saw a Downy Woodpecker in Zion Hill Cemetery, I heard several Crows in the distance, and I saw five or six Juncos on the college grounds. I open out the folder attached to page No. 2, and write on it, opposite the first ruled line of the page, the name "Downy Woodpecker." Now I follow the line across till I come to the vertical column headed "Tuesday, 2nd." In the left-hand portion I write "1" to indicate the number of Woodpeckers seen, and in the right-hand portion I write "Z.H.," to indicate that it was seen on Zion Hill. Then on the folder, opposite the second horizontal line, I write "Crow," and in the corresponding left-hand portion of the column for Tuesday, 2nd, I enter "h. sev.," to indicate that I simply *heard* several, and I do not, of course, enter any special locality. In the same manner I enter next "Junco," "5-6," "C.G." (College Grounds).

Of course, in sixteen days, pages 2 and 3 are used up, so I simply rule off pages 4 and 5 in the same manner into sixteen columns, which will of course accommodate the remaining days of January, with one column to spare. In the same way I lay out pages 6 and 7, and 8 and 9, for February. Inasmuch as the hori-

zontal lines start always at the same distance from the top of the page, the name "Downy Woodpecker" will always correspond with the first line, "Crow" with the second line, and so on, throughout the twelve months. As I add more varieties to the list, the folder, of course, becomes filled down to the bottom. I leave, however, a space of one and one-half inches, as I want to make a weather record at the foot of the column for each day. When this folder is thus filled, I leave a sufficient number of pages to go with it, then insert a second folder, and continue the list as before. My list of last year ran out to the fourth folder.

The weather and the temperature are important factors to be reckoned with in bird observations. I think that the record at the bottom of the daily column can be most profitably kept by some system of symbols, of which a proper index should be written on the first page. For instance, I use Arabic numerals to indicate the weather, as—1. fair; 2. overcast; 3. cloudy; 4. light rain, etc., and Roman numerals to indicate the force of the wind, as—I. none; II. light; III. strong, etc. For instance, take this record—"H'f'd. 1-3 III. N. 28°-30°." This means that the record was made at Hartford, that the day was fair, later becoming cloudy, that there was a strong wind from the north, and that the lowest temperature was 28°, and the highest 30° above zero.

DIAGRAM OF TOP AND BOTTOM OF SPECIMEN PAGE

(Folder)

(Page)

		2. JANUARY, 1900			
		MONDAY 1	TUESDAY 2	WEDNESDAY 3	THURSDAY 4
1. Downy Woodpecker.	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31		1 Z.H.		
2. Crow.			h.sev	3 Z H	
3. Junco.			5-6 C.G.		
		H'f'd. 3-1	H'f'd. 1	H'f'd. 1	H'f'd. 3
		III. N.W	II. S.E.	II. S.W.	II. S
		40°-0°	-6°-19°	25°-31°	40°-43°

I rule my pages once a month, and, that once done, it rarely takes more than five minutes to make out the record of each day. It is easy to remember the new birds to be added to the list, while

a swift perusal of the names already entered will call to mind the old friends that have been met. The result is a complete permanent record for the year. The blank portion (right-hand half) of each right-hand page is reserved for explanatory notes concerning any of the entries made.

It is often desirable to set down the markings of a strange bird while you are in the field, in order that you may look up the name in the key on your return home. There are various blanks published for this purpose, but I know of none simpler than the one gotten out by one of my students, of which I append a diagram :

FIELD DESCRIPTION. NO.....

A. C. HALL, WEST HARTFORD, CONN.

Comparative size, Chippy, Song Sparrow, Bluebird, Robin,
Crow, or larger

Probable family.....
 Bill.....
 Forehead.....
 Crown.....Center stripe.....
 Back.....
 Rump.....
 Wing.....Barred.....Coverts.....
 Tail.....Barred.....Outer feather.....
 Eye.....Line over.....Under.....
 Line through.....Auriculars.....
 Throat.....
 Breast.....
 Sides.....
 Belly.....
 Under tail-coverts.....
 Flight.....
 Notes.....
 Date.....Locality.....
 Name.....

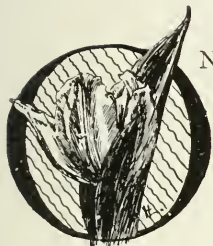
I have gone into a rather elaborate explanation of this method in order that I may make myself fully understood. I am afraid that by so doing I have made the matter seem too difficult. My intention has been to show how easy it is to keep a list of the birds of every day, and I therefore have given a diagram of a part of a page from my note-book for January. It takes but a few minutes in a day, and what are the results? At the end of the year you have an acquaintance with several score of birds and their notes; you have a record of when they appeared, when they were most numerous and when they were last seen. A small letter "s" inserted in each entry will show when they were in song. You have incidentally a record of your whereabouts every day in the year, separate bird-records for special localities, and a complete weather-record. And when, with the returning spring, old friends come back again, it is pleasant to know where and when you first saw them in previous years.

For Young Observers

February Birds

BY MORGAN ST. JOHN (aged 12)

Grammar School, Ithaca, N. Y.



ON the morning of February 19 we went on a walk in search of birds and nests. On our way to the swamp we saw, on one short block, sixteen Orioles' nests. These nests are always hung on drooping branches. They look like little bags on the branches of elm trees. The Orioles weave their nests. Some of them are made from milkweed bark, or of moss, grass, or even of silk and thread.

We also saw a great many Robins' nests, which are carelessly built of mud and grass. The grass is on the outside, the lining is of mud.

Mistress Robin is certainly a sloven housekeeper, and the cup-like nests are lodged in the forks of trees in such a way that a heavy shower or wind brings many of them to the ground.

Crows' nests are built usually in evergreens. We saw them in swamp maples. One of these was about thirty-five feet from the ground. It was made of sticks and twigs, thrown loosely together and lined with cedar bark.

The ground was covered with snow, and we saw in all directions tracks of some bird with three toes in front and one long toe behind. We found that these tracks were made by the Partridge, or Ruffed Grouse. These tracks are remarkably curious, because they are wider than the birds' feet. I found it was because in the winter time little stiff bristles grow around each toe and make little "snowshoes." With these winter shoes on the bird does not sink in the snow. These snowshoes begin to grow in the autumn and are gone by April.

We did not see the Partridge, but we saw dead logs where he had been to pick off the bark to find the bugs and worms. Another interesting track is made by the Partridge. When the bird runs he takes long steps and drags his hind toe. This makes a mark which gives you an idea his toe is longer than his tracks.

We saw a Downy Woodpecker. This one was a female. She was about the size of an English Sparrow. She is like the male bird, except she has no red patch on the back of her neck. This

bird lit on a dead stump, thrust in her bill and pulled out a worm an inch long. She flew off with it to another stump and twisted her head around until she swallowed it.

The Woodpecker's nest may be in a low tree or in a high one, and it is lined with grass and feathers. The male is black above, striped with white. The tail is wedge-shaped and is used to stick in the limbs when resting or eating. There is a black stripe on his head, white over and under his eyes, while there is a red patch on the back of his neck.

A week later, on February 25, we went on another walk in search of birds. This time we climbed upon a hillside. In a short time we counted seventeen or eighteen Robins' nests, and better than all, we saw our first Robin. He had probably been in that locality all winter. He looked as if he had not had much to eat. He ran along the ground, stopping now and then to try to pick up a worm or bug. He seemed to enjoy his breakfast.

We were glad to spy the Junco or Snowbird. He is slate-colored, with gray breast. When he flies you see that the outer tail-feathers are white, and the under ones are blue or dark slate-colored. A friend of mine saw a large flock of Juncos a few days ago,

We had the good luck to see a Chickadee. The Chickadee is a small bird. It has no crest. In color it is gray or brownish. There are patches of black on it. In fact, the throat, chin and head are black, with streaks of white on head, breast, wing and tail. The white is not clear, but dirty looking. Our Chickadee stuck his head in a knothole in a telephone pole.

There were two Song Sparrows to greet us. They sang very sweetly, raising their heads when they sang. They have brown heads, and there are brown stripes on the throat. Their back is brownish gray. The breast is gray, shading to white. There are brown or black spots on the breast and wings. One of the Sparrows was in some brush, or growth of small trees. They are dear little birds, and we like to see and hear them.

We saw a Black-billed Cuckoo's nest, made flat, out of straw. There was no mud nor hair in it.

We saw several Vireo's nests, which are round like a little pot, in the forks of trees.

Last of all, in a large field we saw a Horned Lark. Its note sounds like two or three shrill notes, and then like a water whistle. This Lark is larger than the Sparrow, and is a brownish gray color. It has two little horns on its head.

We did not find the Hairy Woodpecker, but he is about.

What a pleasure it was to see these birds and their nests!

Notes from Field and Study

The Season's Flight of Crossbills

During the past season both Red and White-winged Crossbills have appeared in exceptionally large numbers and have extended their wanderings further south than usual.

Mr. William Brewster writes that the White-winged Crossbills first arrived at Concord, Mass., on November 6, where they were abundant until the 23d, when he moved to Cambridge. At or near the latter place small flocks were seen at intervals during most of December, but they became less frequent during the latter half of the month. Of the Red Crossbills he states that fifteen were seen at Cambridge on November 20, and very few were reported from there after November 15.

From Saybrook, Conn., Judge J. N. Clark writes that the first White-winged Crossbills were noted on November 6, when a flock of six was seen, and that from the 16th—he was in attendance at the A. O. U. during the interim—until after the first week in December they were observed in greater or less numbers, twenty-five in one flock being counted on November 22. About December 1 a flock of about fifty Crossbills, composed of both species, in nearly equal numbers, was seen, and from that date until December 23, when the flight seemed to be about over, several flocks of Red Crossbills, with occasionally a few White-wings, were observed.

At Fairfield, Conn., Mrs. Wright states that Red Crossbills began to appear the first week in October, and on November 5 they were joined by two of the White-winged species. The numbers increased throughout the month, and on December 25, in returning after a three weeks' absence, thirty-eight Crossbills were counted in one flock, feeding on spruce cones that the red squirrels had thrown to the ground. The majority were either young or females, but among them were six adult male Red

Crossbills and five adult White-winged Crossbills.

I have received no reports of the White-winged Crossbill from further south, but the Red Crossbill continued its migration in large numbers at least as far as the vicinity of Washington. Small flocks were



RED CROSSBILL

Photographed from life by J. D. Figgins, Falls Church, Va.

observed at Englewood, N. J., where they rarely occur, in November and December; and as I write (January 8) about thirty birds are actively feeding among the cones of a Norway spruce in view of my study window. Mr. J. D. Figgins tells me that he first observed them at Falls Church, Va., on December 1, where they were abundant until his departure from the locality on the 14th, and Dr. Fisher writes that Mr. James H. Gaut, of the Biological Survey, saw several hundred Crossbills in Virginia, a few miles from Washington, in December.

During the last great southward flight of Red Crossbills, in the winter of 1888-89, I observed a flock of about fifty birds at Aiken, S. C., but thus far this season they have not been reported to me from south of Washington. Mr. H. H. Brimley writes from Raleigh, N. C., that none have been observed there; and Prof. T. G. Pearson,

of Guilford College, N. C., makes the same statement.—FRANK M. CHAPMAN, *Englewood, N. J.*

Blue-Winged Warbler in Southern New York in January

On January 6, 1900, a specimen of the Blue-winged Warbler (*Helminthophila pinus*) was found dead on the borders of the Bronx river, in the hemlock grove in Bronx Park, and was picked up by me from a bed of mosses, where it lay with its beak open, frozen stiff.

My determination of the species has been verified by Mr. E. P. Bicknell and Mr. R. S. Williams, and the latter, who skinned the specimen, noted that the gizzard and crop were entirely empty and the skeleton uninjured, so that the bird evidently starved to death.—ELIZABETH G. BRITTON, *New York City.*

[The specimen above recorded has been presented by Mrs. Britton to the American Museum of Natural History. It is apparently a female and its plumage is in fresh and unworn condition. On inquiry, Mr. Williams states that the bird had doubtless died but a short time before it was found, the eye-balls still being firm and unswollen. The Blue-winged Warbler is not only one of the first of our summer residents to leave, it being rarely observed after September 5, but it winters south of the United States, and its occurrence here at this season is therefore especially remarkable. The fact that the bird had survived several severe frosts—on one occasion the mercury registering 8°—is also of interest. Probably the well known habit of the species of searching for food in bunches of dead leaves and similar situations had enabled it to live where a fly-catching Warbler would long before have died.—F. M. C.]

A Philanthropic Sparrow

The only kindly act I ever saw performed by an English Sparrow was done last year in a Vermont town at a time when tent-caterpillars were particularly abundant. A Chipping Sparrow brought off her brood and was busily trying to teach them to pick up food for themselves, but one could not, or would not, try. He fluttered up to an English Sparrow, which was picking up seeds,

chirped, opened his mouth, and begged for food in an unmistakable manner. The English Sparrow, a fine cock, picked up a tent-caterpillar—a kind which he never ate himself—and thrust it into the Chippy's open beak, then flew away as if he feared that he might be asked to take it out again!—CAROLINE G. SOULE, *Brookline, Mass.*

Hawk and Robin

An interesting incident, illustrating the great force with which birds fly, came under my notice some time since. I was at my window, when suddenly the glass flew into a hundred pieces, and I saw a bird fluttering on the floor. On examination it proved to be a Sharp-shinned Hawk, in fine condition and plumage, but its disastrous passage through the window had injured one wing severely.

In searching for the cause of its actions, we found on the ground, under the window, a large male Robin, dead, but without a mark on him to show what caused his death.

Did he die from fright, or could the Hawk have struck him with force enough to kill him without having external injury? Did the pursuer go with so much more force than the pursued, as to go through the window, while the other dropped dead from the force of the blow?—EMILIA C. ANTHONY, *Gouverneur, N. Y.*

The Notes of the Crow

In all the bird books I have read, I have not found any mention of the American Crow using a call-note other than *caw* and its variations. I have now and then heard them say, *krruck—krruck—krruck*, or *caw—caw—caw—krruck—krruck*, and the like.—CHARLES H. ROGERS, *Philadelphia, Pa.*

[Our correspondent perhaps refers to notes uttered by Crows when attacking a Hawk or Owl, or possibly to the *caw-r-r-r-uck*, *oo-oo-oo-oo-oo*, *oh*, which is commonly heard in the spring when the birds are mating. In either event, we are not a little surprised to find, as Mr. Rogers says, that the ornithological biographies credit the Crow with only the *caw* call.—ED.]

A Pair of Canadian Climbers

How easy it is to go into the woods almost any day and bring back dozens of mental pictures of birds; but lucky is the week and fortunate the fifth of a second in which we secure a really good photograph of a wild bird.

How many scores of Brown Creepers have zigzagged up tree-trunks, and flown down to the bases of others, just too far away! But in late September, 1899, deep in the woods of Digby county, Nova Scotia, a Creeper, well meriting his specific name, *familiaris*, found a tidbit in a crevice of bark, not three feet from me, and tarried long enough for a quick focus and successful exposure. Although a fairly sharp picture was secured, the difficulty of clearly distinguishing the bird within a space of a few square inches admirably illustrates the harmony in pattern of coloration which exists between it and the bark on which it is resting. Two days later, I watched for some time tiny moving specks on my ground glass—reflections of a flock of Pine Grosbeaks, uttering their exaggerated, Goldfinch-like notes in the spruce above me. They showed no signs of descending, and I was about to abandon the



RED-BREASTED NUTHATCH
Photographed from nature by C. William Beebe

attempt to photograph them, when a Red-breasted Nuthatch peered around the corner of a stub in front of me. The second photograph shows him as I saw him. He stayed but a moment, but that short space of time was fatal to any objections he might have had to publicity.—By C. WILLIAM BEEBE, *Assistant Curator of Birds, New York Zoological Society.*



BROWN CREEPER
Photographed from nature by C. William Beebe

Increased Interest in Bird Photography

At the 1889 meeting of the American Ornithologists' Union a committee was appointed to solicit the loan of lantern slides showing wild birds, their nests and eggs, to be exhibited at the next Congress of the Union, when about two dozen slides were shown.

At the meeting of the A. O. U., held in Philadelphia in November last, although no effort had been made to secure papers illustrated by slides, between two and three hundred were exhibited, and many others were not shown for lack of time.

Book News and Reviews

RESULTS OF A BIOLOGICAL SURVEY OF MOUNT SHASTA, CALIFORNIA. By C. HART MERRIAM, North American Fauna, No. 16, Washington, Government Printing Office, 1899. 8vo, pages 179; pll. v; text figures. 46.

Dr. Merriam remarks in his introduction: "All high mountains, particularly those that stand alone, are likely to throw light on the problems of geographic distribution, and are worthy of careful study. Shasta, not only because of its great attitude, but even more because of its intermediate position between the Sierra and the Cascades, promised an instruction lesson, and was therefore chosen as a base station for part of the field work of 1899."

Lack of space prohibits a detailed review of this volume, whose contents is indicated by the following section headings: 'General Features,' 'Forests of Shasta,' 'Forest Fires,' 'Slope Exposure,' 'Life Zones of Shasta,' 'The Boreal Fauna and Flora of Shasta contrasted with Corresponding Faunas and Floras of the Sierra and Cascades,' 'Efficiency of Klamath Gap as a barrier to Boreal species compared with that of Pitt River and Feather River Gaps Collectively,' 'Sources of the Boreal Faunas of Shasta and of the Sierra and the Cascades,' 'Mammals of Shasta,' 'Birds of Shasta and Vicinity' (pages 109-134), 'Notes on the distribution of Shasta Plants.'

The work is an admirable exposition of its author's thorough methods of research, and exhibits his breadth of view in considering the influences which govern the distribution of life.—F. M. C.

OUR NATIVE BIRDS: HOW TO PROTECT AND ATTRACT THEM TO OUR HOMES. By D. LANGE. New York: The Macmillan Company, 1899. 12mo, pages ix+162, 10 ills. in text. Price, \$1.

Here is a book which should be in the hands of every one interested in bird-

protection. The author is not only fully abreast, but perhaps a trifle ahead of the times. As instructor in Nature Study in the public schools of St. Paul, Minnesota, he has learned to appreciate the educational value of bird-study and to develop methods of teaching which here are clearly set forth. As a resident in the country, he has observed the evils of bird-destruction, and has devised means of making our lawns and gardens more habitable for birds by providing them with feeding, bathing and drinking places and nesting-sites, and by destroying their enemies.

The author is not a theorist, but is definite and practical, and the reader desirous of attracting birds about his home will find here exactly the needed instructions, with well selected references to the literature of ornithology and horticulture.

The book is a unique and valuable contribution to the subjects of bird-study and bird-protection, and we wish for it the widest possible circulation.—F. M. C.

BIRD-NOTES AFIELD, A SERIES OF ESSAYS ON THE BIRDS OF CALIFORNIA. By CHARLES A. KEELER. D. P. Elder and Morgan Shepard, San Francisco, 1899. 12mo, pp. vii+353.

Bird-students in California are to be congratulated on the appearance of this volume, which fills the long felt want of a popular handbook of the birds of the state. Mr. Keeler's technical knowledge of ornithology, his sympathy with birds in nature, and his gift of description have especially fitted him to produce a successful book of this kind, and an examination of its pages shows that he has done justice to his powers.

The first 233 pages are devoted to sketches of birds in their haunts, under such titles as, 'A Trip to the Farallones,' 'A Glimpse of the Birds of Berke-

ley,' 'In a Mission Patio,' etc., while an appendix of 117 pages contains 'A Descriptive List of California Land Birds, with Key.'—F. M. C.

THE AVIFAUNA OF THE PRIBILOF ISLANDS.
By WILLIAM PALMER. Extracted from 'The Fur Seals and Fur Seal Islands of the North Pacific Ocean,' Part iii, pp. 355-431. Pls. 2, Washington, Government Printing Office, 1899.

This is essentially a complete monograph of the avifauna of the Pribilof Islands, with a description of the topography of the Islands, an account of their ornithological history, studies of the geographical distribution and migration of their birds, and detailed treatment of the sixty-nine species which have been recorded from the group.

Mr. Palmer is a careful, patient observer and thoughtful student; while we may not always agree with his theories we are grateful for the facts which make this paper an exceedingly important contribution to the literature of ornithology.
—F. M. C.

Book News

ONE of the most interesting features of the last congress of the American Ornithologists' Union was the presentation of a number of letters from Audubon to Baird, which were read by Mr. Witmer Stone, through the courtesy of Miss Lucy H. Baird.

They were written in 1842 or 1843, when Audubon, then some sixty years of age, was preparing for his trip to the upper Missouri to gather materials for his work on North American quadrupeds, and they exhibit in the most pleasing manner, not only their writer's enthusiasm for the task in which he was then engaged, but also his affectionate regard for Professor Baird, who, at the time was a young man of twenty, on the threshold of his career. It is to be hoped that these letters will be published.

THE New York Zoological Park has issued an excellent guide to its collection by Mr. W. T. Hornaday, director of the park. It is beautifully illustrated and

attractively printed, and, aside from its value as a guide, has permanent worth as a text-book of the mammals, birds and reptiles of which it treats. We note with regret the erroneous statement, on page 44, that Brown Pelicans' feathers are not used by milliners.

THE interesting and well edited 'Bulletin of the Cooper Ornithological Club of California' begins its second volume under the title of 'The Condor.'

SOME time since one of our leading monthlies published a drawing of the Murre rookery of the Farallone Islands from a photograph by Mr. C. Barlow, the well known California ornithologist. As very often happens in bird-photography, the birds had left the foreground of the picture, and to remedy this defect the artist has introduced birds in his drawing which were not in the photograph.

While the result may be considered an artistic success, we fear it will not be endorsed by ornithologists, the added birds not being Murres, but King Penguins, a *flightless* species which does not occur within several thousand miles of the Farallones!

THE Jacksonville 'Times-Union,' learning from a notice published in December BIRD-LORE that a party of hunters was bound for Florida 'to shoot all kinds of water birds,' vigorously comments on their coming, under the caption, "Jail the Filibusters," as follows: "We invite all correspondents of this paper to keep a careful watch for such filibusters and all their kind. Moreover, we insist that the intention itself is actionable; in case no capture is made in this state, information is here furnished from reliable sources warranting the Attorney-General in proceeding against these parties within their places of hiding or business and bringing them before the Federal Courts. . . . Such wholesale massacre has become serious to the farmers of the state, as well as to those who take a less materialistic interest in the victims. The Governor has issued his instructions, and there can be no doubt as to the temper which animates his language."

Bird-Lore

A Bi-monthly Magazine

Devoted to the Study and Protection of Birds

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

Published by THE MACMILLAN COMPANY

Vol. II FEBRUARY, 1900 No. 1

SUBSCRIPTION RATES.

Price in the United States, Canada, and Mexico, twenty cents a number, one dollar a year, postage paid.

Subscriptions may be sent to the Publishers, at Englewood, New Jersey, or 66 Fifth Avenue, New York City.

Price in all countries in the International Postal Union, twenty-five cents a number, one dollar and a quarter a year, postage paid. Foreign agents, MACMILLAN AND COMPANY, LTD., London.

COPYRIGHTED, 1900, BY FRANK M. CHAPMAN.

Bird-Lore's Motto:

A Bird in the Bush is Worth Two in the Hand.

BIRD-LORE begins its second year under circumstances which encourage the belief that already it is in a fair way to accomplish the purposes for which it was established. These, it may be remembered, were stated in our first issue to be a desire to aid students of birds in nature and to promote the cause of the Audubon Societies.

As far as our relations with bird-students are concerned, we desire here to express our appreciation of the large number of letters we have received from subscribers who have been kind enough to say that BIRD-LORE has been of assistance to them. Their warmly spoken thanks are very grateful to us, and one letter, like the following, goes far toward recompensing us for any labor expended in their behalf. The writer says: "I wish to take this opportunity of expressing my appreciation of BIRD-LORE and of saying that it has with me accomplished the purpose for which you say it is published—namely, the development of an active interest in birds. I am a novice in ornithology, but BIRD-LORE has helped to make the woods and fields mean far more to me than they ever did before, by disclosing a side of nature to which I

now see I was, until recently, practically blind; and I think that my experiences must be but an example of the experience of many of your other readers, who, like myself, are business men, and so have comparatively little time to study nature."

From the Audubon Societies we have received very welcome assurances that BIRD-LORE is filling a 'long felt want,' and, in this connection, we may be permitted to quote from the report for 1899 of Mr. Witmer Stone, chairman of the American Ornithologists' Union Committee on Bird-Protection. In his report for 1898, Mr. Stone had remarked upon the necessity of an official organ for the Audubon Societies; he now says that the idea of such a magazine has been realized by the appearance of 'BIRD-LORE,' "which has fully justified the highest expectations of its advocates. The Audubon Society department, under the direction of Mrs. Mabel Osgood Wright, serves to unite these organizations and forms, as it were, a central bureau of information upon this line of work." — Auk, Jan. 1900, p. 52.

The press throughout the country, has greeted 'BIRD-LORE' most cordially, and from numerous notices we select the following from the Philadelphia 'North American': "BIRD-LORE completes its first year with the current December number, in many ways the best so far issued, which is saying a good deal. The editor and publishers of this more than attractive, beautifully illustrated magazine deserve the utmost encouragement, for not only is it full of interest for bird-lovers and students of field ornithology, but it is active in a work—that of protecting our birds—which is far more important, economically as well as æsthetically, than most can imagine. For these reasons, we heartily commend BIRD-LORE as the best popular magazine on birds."

This reception of BIRD-LORE is far more gratifying than mere pecuniary success could be and is a potent spur to our desire to make each issue better than the last.

In the earlier numbers of the present volume, which appear at a time of the year when bird-studies form a part of

the nature-study courses in our schools, special attention will be paid to the pedagogics of ornithology, while the later numbers will be more largely devoted to the recountal of experiences afield.

SENATOR HOAR has again introduced into the United States Senate a bill designed to control the traffic in feathers for millinery purposes. It differs from the bill introduced by him last year only in excepting from its provisions birds which are used for food.

'The Millinery Trade Review,' in commenting on this bill, says: "The task of crushing such a measure will be made more difficult than at the last session, but crushed it must be, and every man or woman connected with the millinery trade must lend his or her aid in connection with that of the Millinery Merchants' Protective Association, whether capital is invested in the business or one is a wage-earner. His or her living in the seasons to come depends upon the rise or fall of this most iniquitous and childish measure."

It is this final statement on which the specious pleas of the milliners are usually based, whereas, as a matter of fact, no one thing would more greatly benefit the milliners' trade, as a whole, than the total abolition of feathers—many of which are worn exactly as taken from the bird—and their consequent replacement by various artificial ornaments, the manufacture of which would give employment to a much larger number of persons than are at present engaged in the millinery trade.

IN 'Harpers' Bazaar' for November 18, 1899, there appeared an editorial paragraph to the effect that as Herons are no longer killed for their plumes, which are now gathered from the ground and plucked from captive birds there was no longer any reason why these feathers should not be worn by the most humane-minded woman.

Inquiry developed the fact that this paragraph was written by Mrs. Isabel Strong and was based on information

furnished her by Mrs. Robert Louis Stevenson, who in turn had received it from a missionary to India.

Requests for a correction of this erroneous and misleading article resulted in an admission from the editor of the magazine in question that "unquestionably . . . a comparatively small proportion of those egrets used are found upon the ground." Nevertheless, he has made no further reference in his pages to Mrs. Strong's paragraph, which led the reader to believe that *all* the plumes used were either picked up from the ground or plucked from birds captive in so-called 'Egret farms.' Concerning these 'farms' the editor of the 'Bazaar' is silent, and in every case where investigation has been possible the 'farm' has proved to be a myth. One was described in great detail by a newspaper correspondent, who made the mistake of locating it in Yuma, Arizona, the home of Mr. Herbert Brown, a well-known ornithologist and member of BIRD-LORE's Advisory Council. Inquiry of Mr. Brown develops the amusing fact that the 'farm' consists of one little white Egret kept as a pet at the Southern Pacific Hotel.

Admitting the possibility of picking plumes from the ground, it is absurd to suppose that the plume hunters would adopt this method to the exclusion of shooting, when one well-directed shot would yield more and better plumes than they might find in a week's search.

ASSEMBLYMAN HALLOCK has introduced a bird-protection bill in the New York legislature, which differs from the existing law in making the possession of a bird's plumage as actionable an offense as possession of the bird itself. Under the present law it has been found impossible to convict millinery taxidermists having in stock the freshly made skins of native birds, but the amendment proposed, by making the old law active, will permit of the conviction of these, the worst offenders against it. We, therefore, urge our readers to use all possible influence in securing the passage of Mr. Hallock's bill.

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 (President of the Audubon Society of the State of Connecticut), Fairfield, Conn., to whom all communications relating to the work of the Audubon and other Bird Protective Societies should be addressed. 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

New Hampshire.....	MRS. F. W. BATCHELDER, Manchester.
Massachusetts.....	MISS HARRIET E. RICHARDS, care Boston Society of Natural History, Boston.
Rhode Island.....	MRS. H. T. GRANT, JR., 187 Bowen street, Providence.
Connecticut.....	MRS. WILLIAM BROWN GLOVER, Fairfield.
New York.....	MISS EMMA H. LOCKWOOD, 243 West Seventy-fifth street, New York City.
New Jersey.....	MISS ANNA HAVILAND, 53 Sandford Ave., Plainfield, N. J.
Pennsylvania.....	MRS. EDWARD ROBINS, 114 South Twenty-first street, Philadelphia.
District of Columbia.....	MRS. JOHN DEWHURST PATTEN, 3033 P street, Washington.
Maryland.....	MISS ANNE WESTON WHITNEY, 715 St. Paul Street, Baltimore.
Wheeling, W. Va. (branch of Pa. Society).....	ELIZABETH I. CUMMINS, 1314 Chapline street, Wheeling.
Ohio.....	MISS CLARA RUSSELL, 903 Paradrone street, Cincinnati.
Indiana.....	AMOS W. BUTLER, State House, Indianapolis.
Illinois.....	MISS MARY DRUMMOND, Wheaton.
Iowa.....	MISS NELLIE S. BOARD, Keokuk.
Wisconsin.....	MRS. GEORGE W. PECKHAM, 646 Marshall street, Milwaukee.
Minnesota.....	MRS. J. P. ELMER, 314 West Third street, St. Paul.
Tennessee.....	MRS. C. C. CONNER, Ripley.
Texas.....	MISS CECILE SEIXAS, 2008 Thirty-ninth street, Galveston.
California.....	MRS. GEORGE S. GAY, Redlands.

Wanted—The Truth

During the past year there has been a distinct general advance in the bird-protective movement which would be very encouraging to us if it had not been marred by a most unaccountable and unexpected epidemic of the bird-and-feather-wearing habit.

A year ago we felt that this habit of wearing prohibited feathers was waning, that we were perhaps harping too persistently on one string, and that some of our protection orators would better turn their attention to the marauding Italian, the small boy, and others; in short, improve the law and leave the lady alone for a time, to re-adjust her conscience and headgear according to the bright light the Audubon Societies had shed upon the faults of the last-named article.

A wide-spread interest in birds and the pros and cons of protection ensued. Many women who had really worn egrets and other prohibited feathers, through lack of

knowledge, abandoned them, and even those who did not choose to be considerate could no longer plead ignorance as an excuse.

The effects of the crusade against the killing of song birds could be plainly seen even amid the feather-heaped windows of the past six months. In early autumn, however, Terns, Gulls, whole or in part, Grebes made into bandeaux, crowns or brim facings, as well as made trimmings of portions of other birds, were startlingly conspicuous. These feathers, however, were easily recognized, and therefore avoidable. But, alas, a new pitfall ensnared the same "moderates" that went astray on the quill question, and that pitfall was and is the so-called "made trimmings."

There has been some newspaper agitation upon this subject, but rather wide of the mark and not expressed in a way to win credence. All statements concerning the statistics for and against feather-wear-

ing and bird-destruction should bear the signature of some one whose word is that of authority. There is too much random pen work. The recent interest in bird-protection in all branches has led the various journals of the country, with a well intentioned interest in current events, to publish an unusual amount of natural history items, either collected at random by the office shears or contributed by the many ornithological-Munchausens with all the plausible volubility of little knowledge.

The mis-statements so published, for which no one seems to be exactly responsible, give the lie to many carefully stated truths that the protectionists wish most to inculcate. These errors, also, being more in accord with the ideas of feather-headed ladies, are eagerly received, and even after they have been corrected as far as possible, still continue their influence.

It is on this point that a new impulse can be given the work of the Audubon Societies. Newspaper publicity of the right sort is what the cause most needs, as the newspaper is the only literature that reaches the greater part of the community with any sort of directness. Do what we will, our appeals and leaflets reach but comparatively few.

Let each Audubon Society organize a special press committee composed of two persons, one with a bent for reading, the other to be one who mingles much in society, observing what the local vagaries of headgear may be. Let the reader go once a week to a public library and look over the papers, with a view of keeping in touch with all that is said in regard to feathers, and let the social member keep note of the forbidden or questionable feathers that appear on bonnets, so that necessary local warnings may be given. By this means flagrant mis-statements can be *locally* corrected, making the work doubly sure, and valuable statistics as to local feather-wearing can be published from time to time.

Of course great care must be taken in the choosing of these committees. The members must be well informed as well as

zealous, for in all reform movements, especially those where sense and sentiment are interwoven, there is but a step from the sublime to the very, very ridiculous. If every Society will form such a press committee, able to do conservative and reliable work in its own state, a committee upon which editors can rely, knowing that it has behind it the authority and advice of BIRD-LORE'S Advisory Council, the first step will be taken toward the desired Federation of Audubon Societies, with an annual convention where members may meet face to face and feel the fellowship that comes from the spoken word.

M. O. W.

An Appeal to Bird-Lovers.

[The following appeal for the Gulls and Terns has been issued by the American Ornithologists' Union. Copies of it may be obtained, without charge, by addressing Mr. Abbott H. Thayer, Scarborough, N. Y.—ED.]

Fashion has again attacked the Gulls and Terns, and the feather dealers state that the demand for the skins of these birds far exceeds the supply.

The last moment for saving the surviving Terns has come, and the American Ornithologists' Union therefore appeals to every bird-lover for money, to be used in hiring wardens to protect the birds while nesting. Contributions should be sent to Mr. William Dutcher, treasurer of the Union, at 525 Manhattan avenue, New York city, who will furnish all desired information.

ABBOTT H. THAYER,

WILLIAM BREWSTER,

Pres. Mass. Audubon Society.

WITMER STONE,

Chairman A. O. U. Com. on Bird Protection

ROBERT RIDGWAY,

President A. O. U.

C. HART MERRIAM,

Chief U. S. Biological Survey; Vice Pres. A. O. U.

A. K. FISHER,

Ass't Biologist, U. S. Biological Survey.

J. A. ALLEN,

Curator Vertebrate Zoology, Am. Mus. Nat. His.

FRANK M. CHAPMAN,

Ass't Curator Ver. Zoology, Am. Mus. N. His.

WILLIAM DUTCHER,

Treasurer A. O. U.

Where the Grebe Skins Come From.

By VERNON BAILEY, Biological Survey, Department of Agriculture.

In a Washington street car the other day I counted thirteen Grebe skins on women's hats, and I am sure Washington women are no more partial to these ornaments than the women of other cities across the whole breadth of the continent. The beautiful, silvery skins with rich brown borders are becoming so fashionable and being worn by so many thousand women, that the question arises, Where do they come from?

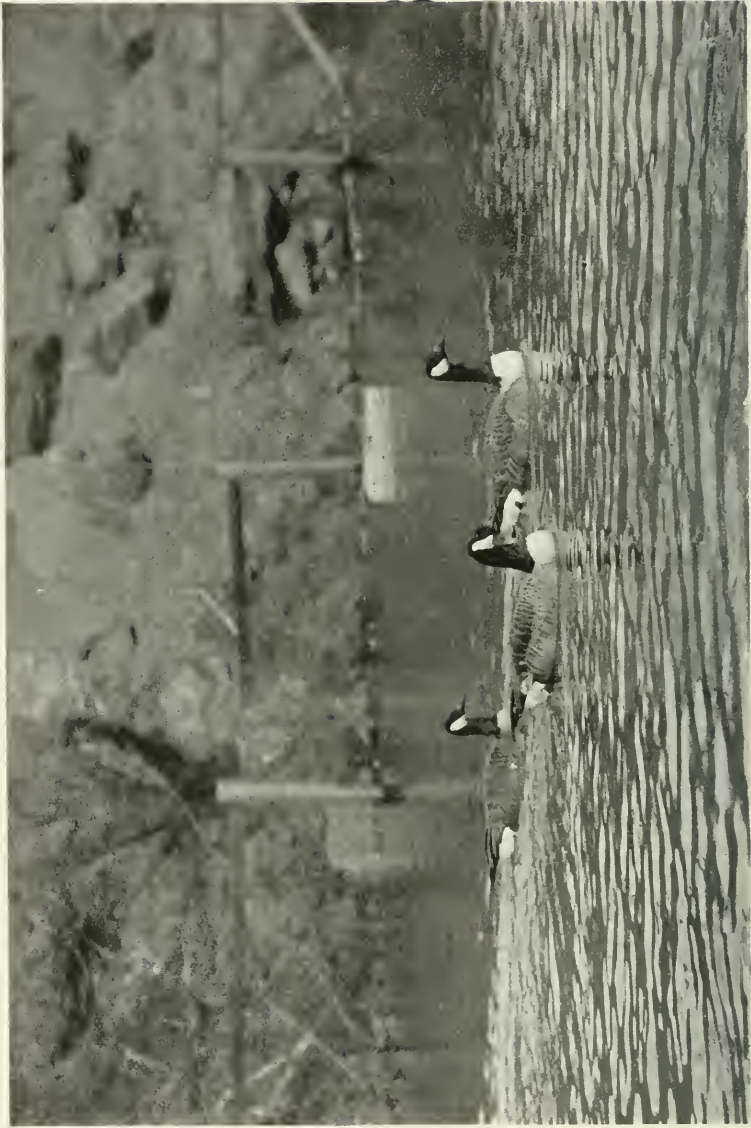
Last summer my work took me among the Grebe hunters of the lake region of eastern California and Oregon. In this half desert region of scattered stock ranches, where great, shallow, alkaline lakes with wide borders of tules fill the bottoms of the valleys and the country seems fitted especially to be a home for wild things, vast numbers of Grebes have for centuries built their nests and raised their young. Their only enemies were the mink, otter and other wild foes that experience had taught them to cope with. Even the Indians left them unmolested, preferring Ducks and their eggs as food, so the Grebes were secure in their homes until fashion claimed them.

Over most of the country the Grebes are known only as migrants, when they are so wary and so expert in diving that they are well prepared to take care of themselves. But on the breeding grounds all is different. As I waded among the tules in the shallow margins of Tule lake, California, last summer, the Grebes followed close after me or, diving, came up again only a few feet away, cackling and scolding, as they tried to drive or coax me away from their island nests, which were floating among the tules, boldly offering their lives for the safety of their homes. Often as I stopped to examine the hastily covered eggs in the damp cup of the floating nest, the old birds would rise noiselessly from beneath

the water by the side of the nest and sit motionless on the surface, watching me with their bright red eyes full of anxiety. Or, as I surprised a brood of little black, downy chicks among the tules one of the parent birds would swim fearlessly up to me to attract my attention, while the other hurried the chicks out of sight into the tules or swam rapidly, with them clinging to her feathers, out into deep water. The three species of Grebes breeding here, the Western, the Eared, and the Dabchick, though belonging to different genera, are similar in habits. They are miniature Loons, graceful, soft-tinted, silvery breasted water sylphs, fitted only for inhabiting the water or the air. Harmless, beautiful, defenceless, they fill the place among birds which the fur seals do among mammals, and their doom seems as sure and as sad.

While among the nests watching the brave, beautiful little people building and guarding their homes and caring for their young, I could hear the guns of the skin hunters along the shore of the lake all day, and I was told that from early spring till the lakes freeze in fall the destruction goes on, though most successfully during the breeding season. The birds are shot, the skins of the breasts are stripped off, dried flat and packed in gunny sacks. They bring the hunters 20 cents each, and I was told that several thousand were shipped from Klamath Falls every week through the summer, and that the hunters often make twenty or thirty dollars a day.

Shall we appeal to these rough, untaught men to desist—to give up the rich harvest they are reaping? It would be as useless as to appeal to the unthinking women who decorate themselves with the innocent breasts. The state laws do not protect these birds, because they are not considered game. A few years more and there will be no need of protecting them; they will be where the Egrets, the Pigeons and the Buffalo are—in our memories.



Photographed from life

WILD GEESE

Illustrating 'A New Camera' for Bird Photographers'

Bird = Lore

A BI-MONTHLY MAGAZINE
DEVOTED TO THE STUDY AND PROTECTION OF BIRDS
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. II

APRIL, 1900

No. 2

A New Camera for Bird Photographers

BY JOHN ROWLEY

Chief Taxidermist of the American Museum of Natural History



FEELING keenly in my work the need of a camera which would enable me to make studies of birds and animals, I have for several years been experimenting with devices which would be more suitable for my purposes than any of the ordinary tripod or snap-shot cameras of the trade.

In 1895 I ordered from Messrs. Scovill & Adams a 5x7 'double decker,' built after plans of my own. This camera had twin lenses, one above the other and both of the same focal length. The upper lens threw the image upon the mirror, whence it was reflected to a horizontal ground glass protected by a hood and situated upon the top of the box: and the other lens communicated directly with the plate below, upon which the exposure was to be made.

This camera worked very well, but was entirely too bulky, and its large size led me to thinking of means by which one lens could be made to do the work that in the twin-lens two were doing, thus reducing the size of the box one-half. My first idea was to build a box on the plan of the ordinary hand camera and place a ground glass on the top. A mirror was then hung in the box at an angle of 45 degrees to the plate and adjusted as in the 'double decker,' but hinged at the back, so that it could be swung up out of the way and the exposure made on the plate at the rear. The lens shutter (a Prosch) was changed so that when open, one pressure of the bulb closed the shutter and released the mirror, which, by means of a spring, flew up and remained clamped to the inside of the top of the box, and shutting out any light that might come in through the ground glass there. A second pressure of the bulb made the exposure on the plate by opening and closing the shutter instantaneously.

The fault of this device was that light came in through the ground glass at the top while the mirror was raising and fogged the plate. To avoid this, a red ground glass was put in, but, in

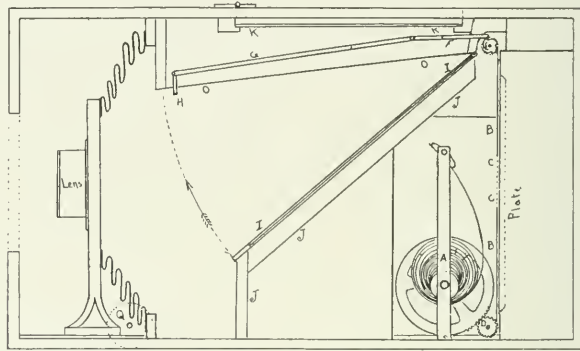


FIG. 1. INTERIOR OF RIGHT SIDE OF MIRROR CAMERA
(HOOD CLOSED)

focusing, the image appeared so faintly upon it that I concluded this would not answer. I finally hit upon the focal plane shutter, and this solved the difficulty.

There is nothing new about the focal plane, or curtain shutter; it has been in use for years; but the one I have employed differs from the one made by the Thornton-Pickard people in that the spring is not coiled in the roller, on the plan of a Hartshorn shade roller, but is on the side of the box, where it is attached to double cogs, as shown in Fig. 1, A. This is stronger than the coiled spring, and gives a more uniform tension and consequently a more even exposure.

The focal plane shutter may be used in front of or immediately behind the lens, or just in front of the plate. In the camera here described, as may be seen by reference to the illustration (Fig. 1, B, B), the curtain works just in advance of the plate and as close to it as possible. The curtain is provided with an adjustable slot (Fig. 1, C to C), which may be widened or narrowed down as circumstances require. The slot forms the speeder, for obviously the narrower the slot the less the time of exposure while the slot is traveling down across the plate, and vice versa. The curtain works upon two rollers (Fig. 1, D and E). To make the exposure the curtain is wound up on the upper roller, E, by turning a key fast to the roller, E, and projecting through to the outside of the box.

As the curtain is rolled upon the upper roller the tension is increased upon the clock spring attached to the large cogwheel

which works upon the smaller cogwheel, which is fast to the end of the lower roller, D. If the key were freed, the lower roller would at once revolve and pull down the curtain from the upper roller and the curtain would then be wound upon the lower roller again.

The upper roller is furnished with a cog attachment, and a small lever (Fig. 1, F) catches into each cog as the roller is wound up and keeps the roller from turning back. In this way the curtain is wound up on the upper roller and held there.

The small lever or catch (Fig. 1, F) is attached to a longer lever (Fig. 1, G). When the distant end (H) of the long lever is raised a little the end of the small lever at E is forced upwards and releases the roller, and the tension of the spring below winds the curtain back upon the lower roller.

A mirror (I, I) set in a light wooden frame is hinged at the upper end and rests upon a bed of felt-covered strips of wood all around (J, J, J). The mirror is hung at an angle of 45 degrees to the

plate, and is placed so that the distance from the lens to the surface of the mirror and up again to a ground glass (Fig. 1, K K) set into the top of the box, is the same distance in a straight line from the lens to the plate. The image comes through the lens upon the mirror and is reflected upwards upon the ground glass,

where it is properly focused by means of the ordinary rack and pinion attachment (Fig. 1, Q).

The mirror is raised by means of the combination of levers (Fig. 2, L, L, L). A spur attached to this lever at M projects through the side of the box and works up and down in a slot (N) cut there for its reception. When the spur of the lever is pressed downwards the mirror (Fig. 2, I, I) is raised and closes tightly upon a felt-lined and light-proof bed (O, O) upon the inside of the top of the box and surrounding the ground glass.

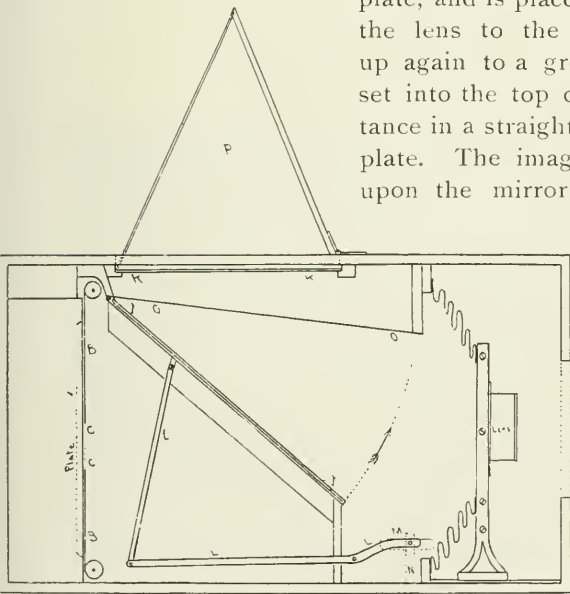


FIG. 2. INTERIOR OF LEFT SIDE OF MIRROR CAMERA (HOOD RAISED)

the spur of the lever is pressed downwards the mirror (Fig. 2, I, I) is raised and closes tightly upon a felt-lined and light-proof bed (O, O) upon the inside of the top of the box and surrounding the ground glass.

Just as the mirror closes upon the bed (O, O) the end of the lever (H) is forced upwards, the catch at E holding the cog on the upper roller is released, and the slot in the curtain passes downwards across the plate and makes the exposure. The ground glass (K, K) is protected with a four-sided pyramidal hood (Fig. 2, P) with a slot in the top to look through (Fig. 3, A). This shuts out

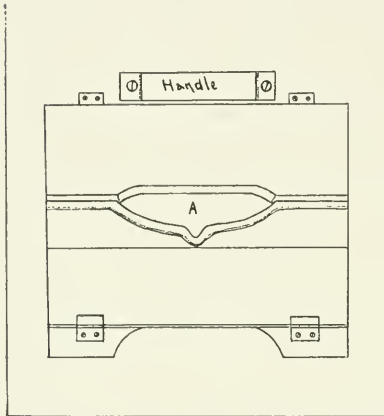


FIG. 3. VIEW OF HOOD (OPENED) FOR GROUND GLASS OF MIRROR CAMERA

all the light from above and gives the operator a good opportunity to focus sharply upon the ground glass inside. When not in use the four sides, being hinged at their bases, fold down upon the ground glass and are out of the way.

The bottom of the box is provided with a nut for the reception of a tripod screw, and the curtain, when rolled up as far as it will go, rolls entirely out of the way. The mirror may then be raised and held there by means of a small sliding attachment to hold down the spur of the lever at M, Fig. 2; and the

box may be used as an ordinary camera by operating a shutter attached to the front of the lens.

This camera thus contains all the advantages of the ordinary hand camera, with the additional features of the full-sized finder and focusing attachment.

To make a shot the camera is held in the hands and the image is focused sharply upon the ground glass. The curtain is already rolled up and the slide drawn from the plate-holder. The plate is in no danger of being light-struck from within, as it is protected by the light-proof curtain. The spur of the lever projecting through the side of the box (M, Fig. 2) is simply pressed downwards with the thumb, the mirror raises out of the way of direct communication between the lens and the plate, and just as it closes upon the light-tight bed at the top, the curtain drops and the slot, passing across the face of the plate, makes the exposure.

Thus far I have used this camera largely upon animals, but as an illustration of its effectiveness on birds I may describe the manner in which the accompanying picture of Wild Geese (see frontispiece) was made.

These birds, although in one of the ponds of Central Park, New York City, are by no means tame, and a close approach to them is

possible only by means of a boat. A tripod camera would, under the circumstances, be useless, nor could one focus a camera held in the hands, then insert a plate-holder, draw the slide and make the exposure, for the reason that the rapid motion of the geese and pursuing boat requires constant adjustment of focus.

A wide-angle, short focus or set focus, snap-shot camera would give too small and too distorted an image to be desirable, while an attempt to guess at the distance in focusing the long focus lens required for bird photography would result in failure ninety-nine times out of a hundred.

But with this mirror camera the focus was easily obtained with the 10-inch Swift lens employed, and the moment the birds appeared sharp on the ground glass the lever was pressed down, mirror thrown up, curtain released, and exposure made, all in the same fraction of a second.

Photographing a Robin

BY A. L. PRINCEHORN, Glen Island, N. Y.

Illustrated by photographs from nature by the author



ROBIN FEEDING YOUNG

IN THE latter part of April, 1898, I noticed a Robin carrying straws to the sill of a window of the Museum building of Glen Island, but, as the wind blew the straw away almost as fast as it was deposited, she was somewhat puzzled, and tried the next window, with the same result.

That evening, with the object of helping her, I nailed a narrow strip of wood to the edge of the

sill which had the most straws deposited upon it, and the following day she resumed work, apparently appreciating the help I had given her, and adopted that window for her nesting-site. The work now progressed rapidly, and in a few days the nest was completed.

My next thought was to obtain a photograph of the bird and nest: but, as the window was far from the ground, I was obliged to make exposures from the inside of the house, and consequently against the light.



ROBIN FEEDING YOUNG

The bird was quite shy at first, leaving the nest as soon as she heard a step in the room, but as we were careful not to disturb her more than was necessary, she soon became more accustomed to our presence, and would remain on the nest while we walked past the

window, although she was always very much on the alert.

When the birds were hatched I ventured to open the window during the parents' absence in search of food, and, having previously focused the camera on the nest, concealed myself and waited for the return of the old bird. The female soon returned, but did not seem at all pleased with the change, appearing quite anxious and nervous. The next day she was more at her ease, and I eventually succeeded in securing a series of photographs of her and her young.



ROBIN FEEDING YOUNG

How a Marsh Hawk Grows

BY P. B. PEABODY, Hallock, Minnesota

With photographs from nature by the author

EVEN so cosmopolitan a bird as the Marsh Hawk must have idiosyncrasies of his own. We talk of uniformity in Nature: but it is diversity that persists, and that proves itself at once the law of life and the zest of study. Nevertheless, to the uninitiated, all Hawks are Hawks: and the wanton who unskilfully shoots a Marsh Hawk on the wing because it is a Hawk, and just to see it drop, lacks, probably, the sense to perceive his utter lawlessness. But let him spend a season on the broad prairie, noting, the while, the many fascinating ways of this most picturesque of prairie birds: and he will thereafter, when afield, drop quickly the gun-muzzle that springs up so instinctively when the bird rises at his feet: the naturalist dominating the bird-killer when he realizes what it is that wafts itself with such nonchalant grace before him.

No mere sportsman can know with what enthusiasm we greet the first old male Marsh Hawk, when winter snows are disappearing and some long drive across the willow-clad waste reveals that exquisite gray bird rising and falling, feather-like, upon the horizon line. And when, some ten days later, his somber mate rejoins him, our recollection kindles as we look backward and recall the days when, driving, road-free, through fallow and brushland knoll and willow-stretch, with instinct trained almost into intuition, our startled horse recoiled from the weather-beaten sitter that rose, a yard before the horse's nose, to vent her cackling displeasure in many an impudent swoop at the intruder's head.

Whoever saw a Marsh Hawk building her nest? Not many of us. One single recollection of a female, bearing a large weed-stem in her talons and sweeping, more swiftly than the wind that bore her, across a well grazed meadow, to drop the stick, without a pause, at the nest-site: this is the one germane fact that the writer has to offer. One is sure that the whole process is carried on and



PRAIRIE WHERE MARSH HAWKS NEST

The blurred object at the center of the picture is a Marsh Hawk arising from its nest

completed in utmost secrecy. After the first eggs are laid, however, the devoted pair so demean themselves that one with even a slight experience in Marsh Hawk ways need spend but a half-hour, at almost any time of day, in locating a Marsh Hawk nest within his horizon.

Three distinct forms of nesting site are observable on the northern Minnesota prairies: low spots in fallow fields, or in meadowy prairie expanses, wherein the grass grows rankly; narrow sconces, amid tiny willow clumps; and, sometimes, brushland knolls, tributary to the feeding grounds. The two open sites, apparently equally favored, seem to be much preferred to the brushy coverts: but this preference may be apparent only as one sees better and further on the open land. Probably the low, weedy and grassy areas on fallow ground are more used than any other sites along the Red River of the North: for here there is abundant run-way and hide-way for the growing Hawklets; while the favorite forms of food (field-mice and sper-mophiles), though not more common than on the meadows and the prairies, are, as a rule, more easily seen and taken on these open hunting grounds. And this certitude and nearness of food must be a prime consideration in the nest-locating: for when there are from three to eight insatiable maws for two mortal parent Hawks to fill, the economic question must rule,—even with the birds. Two exceptional sites must here be noted; both found, curiously enough, on the same day and but eighty rods apart. Each was placed on the level upland prairie, amid scanty growth, and was made flimsily of weeds; each set consisted of six eggs: and all the eggs were exquisitely marked.

It is first in the choice of its nesting sites and then in the whole conduct of its domestic economies, that the wonderful diversity of the Marsh Hawk from its congeners constantly appears. I never yet saw a pair of Marsh Hawks, or a brood of young, and I have seen very many of both, that did not show surprising individualisms that have added incalculably to the pleasure of summer bird studies.

There is a wide variance in the amount of nest material, and in the depth and tidiness of the nest. On higher land the nests are often the scantiest; the brushland nests consisting often of but a wisp of weedy material. Yet, curiously enough, the most elaborate and sumptuous nest I ever found was on a hazel knoll; the explanation for which lay, perhaps, in the fact that rain-spoiled hay-cocks of the previous season lay, in this case, just at hand. With this exception, it is the lowland nests that are built up most, these often rising to a foot in height. All nests in this region are made exclusively of grass and weed-stems.

Whatever the diversities of place and material, the dates of nest-finishing and egg-laying seem to be, in this region, remarkably uniform. Observations covering a dozen nests, and extended over a period embracing the first laying and a rather advanced stage of incubation, have given, as the result of careful calculation, the dates May 10-16 as those within which (barring sets manifestly belated) the first eggs are invariably laid,—this during four seasons, early and late, which makes it fairly plain that Marsh Hawks stay not for weather.

Probably the male Hawk does not feed his mate during the incubation period, since the two share the home duties of that season. But it would be most interesting to learn for how long periods they severally sit, and the hours of the day at which they relieve each other.

How many eggs, at each raising, does the Marsh Hawk lay? I ask not rhetorically, but for information. With us six eggs is the rule; sets of five are fairly common, and sets of four are rare. I have found in early June two sets, of two and three, respectively; these being, manifestly, the “sequelæ” of interruption or destruction.

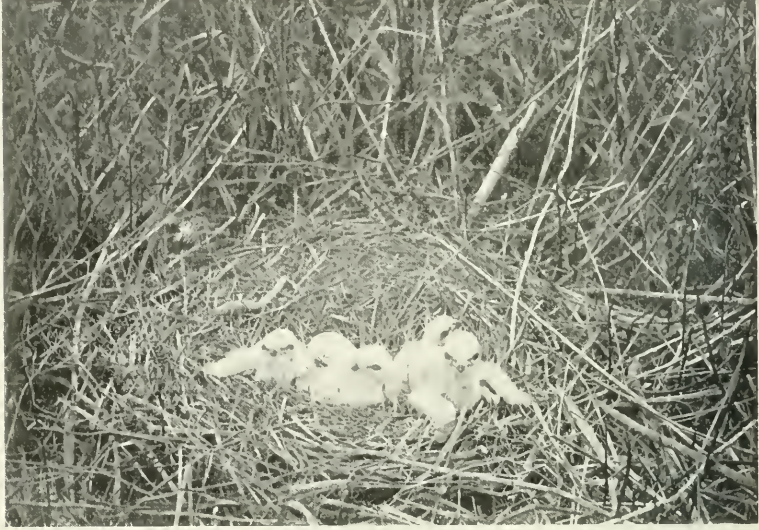


NEST AND EIGHT EGGS OF MARSH HAWK

A most exceptional set of eight was found this season in a 50-foot meadow spot, near large willows, on the lowland flats. But even this case would seem to show the evils of over-production. For, of the eight eggs, one was crowded out of the nest and preserved; while from the seven eggs but three chicks were found when the spot was visited two weeks later. Had the three elder birds devoured the four younger? I have seen a two-thirds-grown Short-

eared Owl trying to swallow his little five-days-old brother: why might not, then, a fledgling Marsh Hawk turn cannibal?

The photographing of the above remarkable nest gave new and beautiful emphasis to a matter of incubation-economics that I have observed in this region, as an absolutely uniform fact, with the



NEST AND EGG, AND MARSH HAWKS ABOUT ONE TO FOUR DAYS OLD
Photographed from nature by E. G. Tabor, Meridian, N. Y.

Bobolink, the Meadowlark and the Marsh Hawk: but to which I have yet never seen attention drawn by any writer or observer. This fact was the more interesting in that I did not notice how carefully the eggs were arranged to secure greatest uniformity of heating from the mother's body until the negative had been developed.

In this region all the species noted above lay, normally, six eggs, and these eggs I have invariably found arranged in two rows of three each. In case of the Bobolinks and Meadowlarks, the two rows are always 'in line' with the entrances, and these birds, when observed on the nest, were always sitting with their heads peering out over their door-steps. In case of the nest of eight eggs noted above, it will be seen from the illustration that two of the eggs lie, each, in the junction between the sets of four that lie nearest together. What a startling revelation, by the way, might be made should some future development of X-ray photography make it possible for one to photograph, for instance, a Sora Rail, sitting on her sixteen eggs in one of our northern marshes?

When once the eggs of the Marsh Hawk begin to hatch—and

they are hatched one day apart—nest-finding is easy. On one occasion I saw a male Marsh Hawk flying heavily westward, a quarter of a mile away, carrying what afterward proved to be leopard spermophile. Steadily I watched him until he had passed the open fields and meadows and reached an open space between two poplar and willow 'bluffs.' He was then more than half a mile away. Suddenly, from the ground below him, rose his mate, with most exquisite grace, catching, with her feet upward, the prey that he dropped to her when she was a few feet below him. With slight detour, she went at once to the nest: to which I also went, well-nigh as directly, locating the nest before I reached it, in the little cluster of willows just beneath the bird.

One brood of birds reared in such a site as this, on a vacant section of land amid the fields, I believe to have been reared by the female alone. In forty days of occasional study I never saw or heard the male. This nest, found when the first egg was hatching, has formed the basis of all subsequent study as to ages, and relative feather-growth: so that the most of what follows will group the facts portrayed about this family, though other broods have supplied their quota of interesting things.

I have never detected any difference in the foods brought to the young at the various stages of their growth. Smaller morsels for the smaller birds, and that seems all. Among the ejecta analyzed have been found the remains of field-mice, leopard frogs, leopard and striped spermophiles; and, I am compelled to confess it, young Pinnated Grouse. Of these, three skeletons have been found. In the main, the male is the hunter. This habit of dropping the quarry to the nest, or to the mate, is rather common—I having, while half concealed in my buggy by dense brush, seen the male approach an open area beyond, hardly two hundred feet away, and drop the game to his mate from a height of fifty feet above her, she then carrying it a hundred yards away, to the nest—the only nest I ever failed to find.

In two weeks after birth the birds grow lanky. About this time they begin to make run-ways from the nest, to eat their food in seclusion, or to find a better shade from the heat of a June sun. At about three weeks the flight-feathers begin to sprout, and the lusty young things, prone enough to hide along their run-ways at two weeks old, become now more bold, yet no less inclined to slink away the minute one's back is turned. After this age the photographing of these birds becomes a science by itself—requiring cool, sunny days, abundant patience, and no end of plates. The mosquitoes and the blue-bottle flies, both being faithful retainers at the Marsh Hawk's

courts: the intense heat, which makes the birds loll and fidget; the pleasant effluvium, evidencing garter-snakes, and such like, and above all, the habit the birds have of sneaking away just as one has them nicely posed,—these are some of the amenities of this sort of photography. Yet there are compensations. Call it hypnosis, or what you will, the young birds, until thirty-five days old, when the feathers are quite fully grown, show themselves to be most patient sitters, even when, to speak Irishly, they are lying on their backs. All this, if one keeps his eye upon them. Thus, one four weeks' old bird lay on his back not less than twenty minutes in the blazing sun with his



MARSH HAWKS, 24 DAYS OLD

eyes wide open, the blue-bottles buzzing about his head, and the mosquitoes plying their beaks upon his cere. At this age the young birds seem to become quite inured to the sun, yet they now spend most of their time at some distance from the nest—from ten to fifty feet—the paths that they severally and collectively use becoming by this time well beaten and strewn with pellets and the cast-off elements of their plumage.

At about thirty-four days the first real attempt at flight begins. No longer now, when the young bird is traced to his lair, will he throw himself upon his back, in open-beaked defiance; but he rises at once just from under one's feet, and flaps, not ungracefully, along the grass or bush-tops. At about forty days from birth the young make fairly long flights, rising even above the tree-tops, amid which some of them have been reared.

Such is the life-history of a young Marsh Hawk—from egg to air. Thirty days in the shell, and forty days a'growing—after who knows how many days of site-surveying and nest-building, in all

nearly three months of domestic toil and devotion on the part of its parents. No wonder that both the parents and the young should cling to the dear, familiar spot. No wonder that the parents should return, year by year, to the hunting range they know so well; and that even the young, when freed from the trammels of their lairs, should yet come back, for days, as I have seen them do, and haunt the spot wherein they gained their bulk, strengthened their sinews and fortified their wings for freedom. Yet the daily lengthened flight transforms the hasty flapping of the short-tailed tyro into the steadier poise of the practiced wingster; and soon the brown birds, old and young, have left the gray ones to brave the autumn air—and have gone afar to fatten on the southern fields.



MARSH HAWKS, 34 DAYS OLD

The Egret Hunters of Venezuela

BY GEORGE K. CHERRIE

Curator of Birds, Brooklyn Institute of
Arts and Sciences



THE country on both sides of the River Apure and its tributaries is low and flat, with innumerable swamps and marshes. This country of *llanos* is the Egret country, comparatively few plumes being collected in the valley of the Orinoco proper. The center of the plume industry is at San Fernando de Apure, where almost every business house, of whatever character, has a prominent sign before its door of "Aqui se compra PLUMAS" (Plumes are bought here). I have visited San Fernando twice during my stay of a year and a half in this region, and each time counted about fifty bungos which were employed by their owners in plume hunting.

These plume hunters' bungos are, as a rule, long, light dugout canoes, with an arched covering like a wagon top for full a third of their length, made of light matched lumber so as to keep provisions and plumes dry. This word regarding the style of covering, or *carosas* of these canoes may not be amiss, inasmuch as the ordinary *carosa* is made of palm leaves and would soon be torn and become leaky by the constant pushing through the tangle of the forest swamps.

The methods employed by some of the native plume-hunters may explain some of the stories about plumes only being gathered at the heronries after being molted by the birds. An ordinary native's household furniture consists of a few pots and pans, hammocks, and a blanket for each member of the family: a small native cedar wood-box, or trunk, containing the family wardrobe and valuables. These are all easily embarked in a bungo, with provisions of *casava* and dried salt meat. The hunter and his family embark and work their way up or down the river and back, through the swamps and marshes, to the heronries, where they live until their provisions, or the Herons, are exhausted.

While in the heronries the man shoots every Egret that he can possibly secure, while the women and children employ themselves by picking up such plumes as are to be found under the trees and along the edges of the ponds and marshes. Every sort of plume is taken, good, bad and indifferent: long and short, dirty and clean.

At the houses of the principal plume merchants in San Fernando

one will see a long table where the plumes are being carefully sorted into various grades, according to their length and condition. These grades are then made up into little bundles, an inch and a half or two inches in diameter, and tied at the base. In order to permit of this sorting, the plumes taken from freshly killed birds are not removed, as they are by Florida plumers, by the cutting away of a patch of skin from which they grew, but are pulled out either singly or in little bunches, or sometimes they are cut off close to the skin.

Concerning the Egret farms said to be established in Venezuela, the only farming of the kind I saw or heard of was of the same character as the numerous *Parrot farms* I observed! In nearly every native house one sees from one to half a dozen Parrots, and it is also not uncommon to see two or three Egrets picketed in front of a rancho; a string two or three feet long being tied around one leg and attached to a stake; while, to make escape more difficult, the wings are usually cut off at the carpal joint.

Nearly every river steamer from San Fernando carries from one to a dozen of these maimed birds to Bolivar or Port-of-Spain, Trinidad, to be disposed of to tourists or others, who have not an opportunity to secure the birds for themselves. The soiled, worn and dirty plumes from these captive birds are sometimes taken, but Egret "farming" is no more of an industry than is Parrot "farming."

Two of several small river steamers that were formerly employed solely in plume hunting were owned by Americans who, to my personal knowledge, had gone out of the business and were employing their boats as freighters, for the reason that Egrets are becoming so scarce that it is no longer profitable for them to hunt them.

[Mr. Cherrie's observations in regard to the collecting of molted plumes show on what a slender basis of fact rests the assertion of milliners and others that "as Egrets' plumes are now gathered from the ground, the birds no longer being killed, they may be worn by the most tender-hearted woman." The truth is, that the gathering of shed plumes has absolutely no bearing on the question of the destruction of Herons. The hunter and his assistants pick up all the plumes they find and shoot all the birds they can, the ultimate result, in any case, being extermination of the plume-bearing birds.

The myth of the Egret "farm" is also illumined by Mr. Cherrie's article, but, like many another attractive lie, it will doubtless survive all attacks make upon it.—ED.]



From a mounted specimen.
SNOWY HERON, OR EGRET, IN NESTING
PLUMAGE

For Teachers and Students

Bird Work at Wellesley College

BY MARION E. HUBBARD

Instructor in Zoology at Wellesley College



BIRD study at Wellesley is a part of the course in general biology, and consists of field work, of lectures and of laboratory practice throughout the second half-year. Though, however, it is conducted by the department of zoology, and for the benefit of those students who elect that course, the lectures are open to all, and there exists throughout the college a genuine interest in the subject.

The facilities for this work at Wellesley are, for a college, unique. Lake, river and brook, grassy field and marshy meadow, deep wood and cultivated estate, orchard and clearing, hillside and swamp, make the situation singularly attractive, and tempt many birds of many kinds. Those which may easily be seen within a radius of half a mile from the main building number 89, and the list of those recorded within a radius of 8 miles includes 244.* This wealth of material would justify the devoting of time to a pursuit so delightful in itself, were there no educational advantages involved. But when we remember that bird study has been demonstrated to be one of the best of fields for the training of that accurate observation and that clear thinking which every beginner in scientific work must cultivate, the reason for its forming a part of a course on general biology is made clear.

Not less desirable than the mental training afforded by this pursuit is of course the cultivation of a spirit of friendliness and protection toward these 'brothers of the air.' All studies in natural history tend to develop in us the humane, but birds appeal so naturally and so powerfully to the gentler side of our natures that they need only be known to win love and protection. To interest women in living birds is the surest way to kill their interest in dead ones.

These, then, are the objects of the work,—the training of a quick and accurate eye, the developing of a thoughtful mind, and the rousing of a chivalrous spirit. And yet, while these aims con-

* See Morse's "Birds of Wellesley and Vicinity," pp. 7 and 51.

stitute the justification of the course, and form the mainspring of the methods of procedure, it must be confessed that when the time for action comes, pedagogical motives fly to the winds, and our only desire is to make other people see how much they miss by having no acquaintance with these friends. After all, if one really knows the birds, does not that signify all the rest? They themselves are the best educators, they are their own most eloquent advocates.

The chief aim being, then, to know the living bird, the greatest emphasis rests on field work. The 'walks' form the characteristic feature of the course. Once or twice in the early spring the girls by turns go out in squads of 8 or 9 with the instructor in charge, and when the warm days of May and June arrive, sometimes a whole division of 25 to 30 moves out of doors for its class appointment, to follow the sights and sounds of which those days are full. Most of the field work goes on, however, independent of the instructor, and so thorough is it that no Wellesley landscape in the spring would be complete without somewhere a motionless figure, gazing through opera glass intently into space.

The outdoor work is likely to be vague unless steps are taken to render it definite. One device which may be adopted is the use of charts for guiding and recording observations. We employ at Wellesley three such charts: the first presents and names the various colors with which the ornithological student needs to become familiar: the second deals with the seasonal distribution, showing in a graphic way the times of arrivals and departures; and the third is used as a check list. This last one, ruled in squares, contains at the top the names of the members of the class, and at the side the names of the birds which occur within a radius of 5 to 10 miles from the college as a centre. Each girl enters in the column below her name, in line with the name of the bird which she has seen, the date of her observation. Before she completes the course, she must have identified in the field a certain number of species. This total varies, of course, with the changing conditions of different seasons; last year it was 40,—a small number, it is true, but small because experience had shown that it is better to demand fewer than the majority can see.*

An excellent museum and an adequate library do much to simplify the task of identification. Just outside the laboratory stands a small case, in which are kept bird books, ranging from such classics

* It may be objected that to make any requirement takes away from the interest and spontaneity of the work. This, however, is not the case, as is proved by the fact that while pressure must exist for the few, it is needless for the majority, who observe more than the number fixed. To forego one's morning nap is not merely heroic, but is, in the case of many who do it, indicative of genuine interest in the subject.

as Wilson and Audubon, through encyclopedias like Newton's, to those works which in recent years have sprung up in answer to the call for 'handbooks.' Beside it is a reading table on which lie BIRD-LORE and other magazines, as well as the publications of the Audubon society. Each student possesses one book, either the 'Birds of Wellesley and Vicinity,' or one containing keys for identification.

Formal instruction is embodied in weekly lectures, to which come others than those who are members of the class. The object of these talks is to arouse an interest in the birds so great that it will be satisfied with nothing short of personal acquaintance with them in the field. They give, therefore, only such hints of the time and place for finding them, of their characteristic notes and habits, as will equip the student for outdoor work. Beginning in February with the winter population,—permanent residents, winter residents and visitants,—they constitute with the advance of the season a running calendar of the successive arrivals. Besides serving as formal introductions, they aim also to make the student more thoughtful, by presenting subjects of more general interest,—as migration, nesting, the adaptation of structure to habit and environment, and classification. Mounted specimens illustrate these talks, but, since they cannot easily be seen across the room, they are supplemented by colored crayon pictures drawn two or three times life size.

A second means of facilitating the field work is the frequent laboratory practice in description and identification. After each lecture specimens of the arrivals for that week are arranged in small glass cases, which admit of their being viewed from all sides. They are then placed where they will be accessible to all, and the colored pictures hang near, so that each one has a chance to become familiar with every bird. At irregular intervals their names are covered, they are rearranged in the cases, and there follows a test in rapid identification which is either the delight or the despair of the would-be ornithologist. The student learns at the start, and remembers by later practice, how to describe correctly a bird's appearance. She learns in addition how to identify by the aid of keys, particularly such as can be used in the field. These exercises in the laboratory, by training the eye, save much time in the recognition of birds, and this is essential for one so busy as is the college girl. Besides this 'rapid-fire' practice in description and identification, there are at intervals quizzes, both oral and written, which cover points of structure, of adaptation to habit and environment, and the general characters of the most important orders and families.

Since Wellesley is naturally so favored, it is worth our while to

make it as far as possible a veritable paradise for birds. We try, therefore, not only to keep them, but also to make the grounds even more attractive than nature formed them. The edict has gone forth that all cats walking upon the grounds do so at their own peril. Red squirrels and English sparrows are made to feel at times that a price is set upon their heads. A generous friend has given in the last two years a large number of bird-attracting trees, which have been set out in some of the favorite resorts. Holes in one of the large barns will offer a home for Swallows, and bird houses, it is hoped, will attract those whose eyes are open for the sign, 'To Let.' On one or two spots stand shelters where, especially in the winter, the birds may find food, these shelters answering the purpose of the 'soup kitchens' in our large cities. There exist, in addition, numerous private charitable enterprises, which have in many cases made the recipients quite tame.

It is comparatively easy to arouse enthusiasm on this subject, but the rub comes in adding to it definite knowledge and the spirit of thoughtfulness. The lack of these elements is what makes the bird 'faddist.' It is all very well to wax eloquent over the Bluebird and the Chickadee, but it must be somewhat dampening to enthusiasm not to know a Bluebird from a Bluejay or a Chickadee from a Nuthatch. The same difficulties beset bird study at Wellesley which we meet in the study of general biology, and which probably exist in the study of any subject anywhere,—namely, indefiniteness, whether in observation or in knowledge, and thoughtlessness as to what is seen.

There is no absolute remedy for these defects, but they may be reduced to a minimum by directing carefully and rather minutely the observations, and by insisting constantly upon accurate results. After the ordinary methods, both in the field and in the laboratory, any device which will secure the desired end is welcome, especially if it brings in variety. The little game of guessing a bird by a description of its markings or structure or habits, or the reverse of this, guessing by the 'twenty-question' method, is admirable, for it requires as much ready knowledge in a college girl as it does in primary children. This year the field notes will include answers to a posted set of questions, dealing with the structure and habits and relations of some of our common representatives. These questions will serve the double purpose of showing the student how to work, and of giving her definite, tangible material for the understanding of some of the more general subjects of interest in ornithology. Each student, moreover, will 'adopt' one bird, to study it fully, in its structure, its habits, its nesting, its food, its song, and its relation to its own

family and order. From this as a center will radiate the knowledge of other birds, both of individuals and of their relations with one another and with the rest of nature.

Bird study at Wellesley is, of course, not ideal, either in its methods or in its results. Even when we make allowance for improvement in the future, by the introduction of other and new ideas, we must remember that the best bird work takes time and a sense of leisure which under present conditions we cannot expect in a college. But though the course is imperfect, it is worth the effort, if only because it brings to so many girls a fresh and a keen delight, and because it opens to them an endless field of pleasure for their after-college days.

Spring Migration Tables

GIVING AVERAGE DATES OF ARRIVAL OF BIRDS AT PORTLAND, CONN., AND OBERLIN, O.

SPRING MIGRATION AT PORTLAND, CONN.

BY JOHN H. SAGE

FEBRUARY 15 to 28

Woodcock, Purple Grackle, Robin.

MARCH 1 to 10

Hooded Merganser, Flicker, Phœbe, Red-winged Blackbird, Song Sparrow, Fox Sparrow.

MARCH 10 to 20

Black Duck, Canada Goose, Wilson's Snipe, Mourning Dove, Cooper's Hawk, Meadowlark, Purple Finch.

MARCH 20 to 31

Wood Duck, American Golden-eye, Buffle-head, Old-squaw, Horned Lark, Cowbird, Rusty Blackbird.

APRIL 1 to 10

Horned Grebe, Baldpate, Green-winged Teal, American Bittern, Great Blue Heron, Wilson's Snipe, Marsh Hawk, Sharp-shinned Hawk, Osprey, Yellow-bellied Sapsucker, Kingfisher, Vesper Sparrow, Savanna Sparrow, Chipping Sparrow, Field Sparrow, Tree Swallow, Pine Warbler, Ruby-crowned Kinglet, Hermit Thrush.

APRIL 10 to 20

Holbøll's Grebe, Pied-billed Grebe, Broad-winged Hawk, Swamp Sparrow, Purple Martin, Barn Swallow, Bank Swallow, Yellow Palm Warbler, Louisiana Water Thrush.

APRIL 20 to 30

Green Heron, Black-crowned Night Heron, Spotted Sandpiper, Bald Eagle, Short-eared Owl, Whip-poor-will, Nighthawk, Chimney Swift, Kingbird, Least Flycatcher, White-throated Sparrow, Towhee, Red-eyed Vireo, Warbling Vireo, Yellow-throated Vireo, Blue-headed Vireo, Black and White Warbler, Myrtle Warbler, Black-throated Green Warbler, American Pipit, Brown Thrasher, House Wren.

MAY 1 to 10

American Coot, Solitary Sandpiper, Bartramian Sandpiper, Pigeon Hawk, Yellow-billed Cuckoo, Black-billed Cuckoo, Ruby-throated Hummingbird, Crested Flycatcher, Wood Pewee, Bobolink, Baltimore Oriole, Orchard Oriole, Grasshopper Sparrow, Rose-

breasted Grosbeak, Indigo Bunting, Scarlet Tanager, White-eyed Vireo, Worm-eating Warbler, Blue-winged Warbler, Golden-winged Warbler, Brewster's Warbler, Nashville Warbler, Parula Warbler, Yellow Warbler, Black-throated Blue Warbler, Black and Yellow Warbler, Chestnut-sided Warbler, Black-poll Warbler, Blackburnian Warbler, Prairie Warbler, Ovenbird, Water Thrush, Maryland Yellow-throat, Yellow-breasted Chat, Redstart, Catbird, Wood Thrush, Wilson's Thrush, Olive-backed Thrush.

MAY 10 to 20

Greater Yellow-legs, Least Sandpiper, Turnstone, White-crowned Sparrow, Tennessee Warbler, Cape May Warbler, Bay-breasted Warbler, Wilson's Warbler, Canadian Warbler, Blue-gray Gnatcatcher, Long-billed Marsh Wren, Gray-cheeked Thrush.

MAY 20 to 30

Semi-palmated Plover, Mourning Warbler.

SPRING MIGRATION AT OBERLIN, OHIO

BY LYNDS JONES

MARCH 1 to 10

Killdeer, Red-winged Blackbird, Rusty Blackbird, Meadow Lark, Bronzed Grackle, Robin, Bluebird.

MARCH 10 to 20

Canada Goose, Mourning Dove, Belted Kingfisher, Cowbird, Fox Sparrow, Towhee, Loggerhead Shrike.

MARCH 20 to 30

Great Blue Heron, Phoebe, Vesper Sparrow, Hermit Thrush.

APRIL 1 to 10

Pied-billed Grebe, Pectoral Sandpiper, Chipping Sparrow, Field Sparrow.

APRIL 10 to 20

Bartramian Sandpiper, Spotted Sandpiper, Yellow-bellied Sapsucker, Chimney Swift, White-throated Sparrow, Barn Swallow, Swamp Sparrow, Myrtle Warbler, Purple Martin, Brown Thrasher, Ruby-crowned Kinglet.

APRIL 20 to 30

Wilson's Snipe, Solitary Sandpiper, Kingbird, Crested Flycatcher, Least Flycatcher, Bobolink, Baltimore Oriole, Grasshopper Sparrow, Cliff Swallow, Bank Swallow, Scarlet Tanager, Red-eyed Vireo, Warbling Vireo, Black and White Warbler, Blue-winged Warbler, Nashville Warbler, Yellow Warbler, Black-throated Green Warbler, Palm Warbler, Ovenbird, Maryland Yellow-throat, Redstart, House Wren, Catbird, Wood Thrush, Wilson's Thrush, Olive-backed Thrush.

MAY 1 to 5

Orchard Oriole, Rose-breasted Grosbeak, Indigo Bunting, Yellow-breasted Chat, Yellow-throated Vireo, Cerulean Warbler, Blackburnian Warbler, Green-crested Flycatcher.

MAY 5 to 10

White-crowned Sparrow, Parula Warbler, Tennessee Warbler, Cape May Warbler, Bay-breasted Warbler, Black-throated Blue Warbler, Magnolia Warbler, Canadian Warbler.

MAY 10 to 15

Yellow-billed Cuckoo, Black-billed Cuckoo, Ruby-throated Hummingbird, Wood Pewee, Black-poll Warbler, Mourning Warbler.

MAY 15 to 20

Least Sandpiper, Traill's Flycatcher.

For Young Observers

The Wise Old Crow

GARRETT NEWKIRK

Not all the people know	That he's selfish we admit,
The wisdom of the Crow :	But he has a lot of grit,
As they see him come and go.	And on favor not a bit
With verdict brief,	Does he depend ;
They say. "You thief!"	Without a friend,
And wish him only woe.	He must live by mother-wit.

The Crow is rather shy,
With a very watchful eye
For danger coming nigh,
 And any one
 Who bears a gun
He's pretty sure to spy.

The clever farmer's plan	The Crow looks on with scorn,
Is to make a sort of ban,	And early in the morn
By stuffing clothes with bran,	Pulls up the farmer's corn :
Topped with a tile	He laughs at that,
Of ancient style,	The queer old hat,
—A funny old scare-crow man.	Of the scare-crow man forlorn.

A YOUNG Observer who read the 'Hints to Young Bird Students,' published in BIRD-LORE for August, 1899, writes as follows: "I read an appeal signed by several prominent ornithologists, among them Mr. Brewster, calling upon the boys and girls in general to be more careful about their collecting of birds and eggs. I read this appeal with interest, and decided that it applied to me also: so I have determined to leave eggs strictly alone and study the habits of birds instead. I have a great respect for the birds of America."

Notes from Field and Study

Note on the Blue-Winged Warbler in New York City in Winter

On December 10, 1899, I was surprised to see in the hemlock woods at Bronx Park, New York city, a Blue-winged Warbler (*Helminthophila pinus*) hopping about in the bushes in a perfectly contented manner. It was not at all shy, so I had no difficulty in seeing it as much as I chose. On receiving the February number of BIRD-LORE, I saw that a bird of the same species had been found dead at the same place about a month later. As these birds generally leave the latitude of New York early in September, I think it more than probable that the same specimen was seen in December and found dead in January.—FLOYD C. NOBLE, *New York City*.

Notes on the Food of the Chickadee and Screech Owl

Birds are sometimes accused of injuring trees, eating fruit, or otherwise harming man, when, if the matter were investigated, the facts would be found quite the opposite.

One winter day, while passing some willows, I saw a Chickadee picking vigorously at—apparently—the buds. Surprised that this bird should prove injurious, I examined some of the buds more closely. In the angle formed where they lay upon the stem, nearly all had a row of tiny black insects, while those at which the Chickadee had been at work were cleared of these, though themselves uninjured.

Again, an acquaintance shot two Screech Owls as the first step toward destroying a little colony of them that was "driving away the small birds" from the village lawn near by. Upon opening the stomachs, they were found to contain only harvest-flies, fifteen in all, and every one in the pupa form in which they leave the earth. Probably the

English Sparrows from the streets had far more to do with the driving away of the birds, but the Owls, busy destroying the injurious harvest-flies, got the blame.—ISABELLA McC. LEMMON, *Englewood, N. J.*

Two Notes from the Berkshires

On December 3, 1899, I was in the woods along the Housatonic River observing the 'hoards' of White and Red-breasted Nuthatches, when I heard the familiar rattle of a Belted Kingfisher. Following the call, I scared the bird from some willows on the bank. It was alone.

Later in the day I saw a strange Woodpecker on a tree higher up the river. It flew at once toward the woods, calling at every 'swoop.' I followed it, and as I was crossing the open meadow another one flew over my head, calling like the one I was following.

Their call, which they uttered on the trees as well as on the wing, consisted of one syllable. In the woods they were shy, and kept well to the tops of the trees.

From the glimpses I had of them and the description I made, I am convinced they were Arctic Three-toed Woodpeckers. One had a yellow head patch.—JOHN DENWOOD, *Pittsfield, Mass.*

Additional Notes on the Season's Flight of Crossbills

We have continued to receive many notes on the unusual abundance of Crossbills during the present winter, from which we abstract the following in regard to the White-winged Crossbill: John H. Sage writes from Portland, Conn., that on February 12 he saw more than a thousand of these birds, with about as many Pine Finches; George P. Ells reports them from Norwalk, Conn., under date of March 7; nine birds appeared in the Norway spruce trees at Englewood, N. J., on February 21, where from three to thirteen have since been

observed daily; and William L. Baily, Samuel H. Barker and Witmer Stone report their abundance in the vicinity of Philadelphia, where they were first observed late in December. South of this point no reports of White-winged Crossbills have been received, Dr. Fisher writing from Washington that none have been observed in the region about that city. At McConnellsville, Ohio, C. A. Morris reports that three White-winged Crossbills were observed on November 19, 1899.—FRANK M. CHAPMAN.



NEST OF YELLOW WARBLER

An Interesting Nest

A correspondent recently requested us to identify a nest which she had found in a willow bush on one of the Thousand Islands, and which she described as pensile, with a cover, and having the entrance at one side! This was evidently so unlike the nest of any of our eastern birds that we asked to have it forwarded for examination, the results of which, with a photograph of the nest, are appended: The nest was undoubtedly built by a Yellow Warbler. Probably before it was fully completed, since there appears to be no lining, a Cowbird laid an egg in it. This caused the Warbler to build a platform or second bottom over the unwelcome egg, with the intention of placing a second nest on the first one. This second nest, for some unknown reason, was never completed, and its bottom formed the "cover" to the first nest.

Subsequently, a deer mouse—probably—discovered the concealed egg or eggs and reached them by making an opening in the side of the nest, traces of his feast being still evident in the shape of dried albumen on the floor of the nest.—FRANK M. CHAPMAN.

The Bird Protection Fund

The treasurer of the fund for the protection of Gulls and Terns reports that subscriptions amounting to \$477 have been received in sums from one dollar to one hundred dollars.

The bird statutes of Maine, Massachusetts, New York, New Jersey, Maryland and Virginia afford protection to all species of Terns during the breeding season, and arrangements are now being made in each of these states to employ responsible and fearless wardens to enforce the bird statutes, and it is believed that before the next breeding season opens suitable guardians will be secured for each of the few remaining colonies.—WILLIAM DUTCHER, 525 Manhattan avenue, New York City.

Bird Slaughter in Delaware

From Milford, Delaware, comes the news that a New York house—"Al. Richardson & Co."—has placed an order in that town for 20,000 birds, to be delivered within two months. A strong effort is being made by Mr. Witmer Stone, Chairman of the A. O. U. Committee on Bird Protection, to prevent this destruction of bird-life by enforcing the laws of the State of Delaware, and it is hoped that every one who can assist Mr. Stone will communicate with him at the Academy of Natural Sciences, Philadelphia.

The Hoar Bill

Senator Hoar has apparently again failed to secure the passage by Congress of his bird protective measure. The clause prohibiting the importation of the plumage of foreign birds has aroused the opposition of a number of prominent naturalists, who assert their belief that the enactment of this law would result in an increased demand for the plumage of native birds.

Book News and Reviews

THE BIRDS OF BERKSHIRE COUNTY, MASSACHUSETTS. By WALTER FAXON and RALPH HOFFMANN. Reprinted from Collections of the Berkshire Historical and Scientific Society. Vol. III, pp. 109-166, Pittsfield, Mass., Feb. 23, 1900.

The authors state that the "information which they have obtained concerning the birds of Berkshire county is the result of several summers' study in various parts of the county, particularly at North Adams and Stockbridge, and of visits made to the same places in winter. Repeated visits have also been made in the spring and autumn, especially to Lanesboro, where the broad valley, serving as a highway for migrating birds, offers exceptional facilities for the observation of transients." They have also "supplemented their personal knowledge with whatever trustworthy information they could obtain from others," and have availed themselves of the published records of previous writers whose works are enumerated in a bibliography containing forty titles and occupying the concluding six pages of their paper.

An introduction of eight pages gives a clear and comprehensive description of the chief topographical features of Berkshire county and of its faunal characteristics, with particular reference to the Canadian element of the higher attitudes.

The list proper, occupying pages 9 to 53, enumerates 107 species, the times of arrival and departure and manner of occurrence of which are briefly stated.

The authors' names are an assurance that their paper adequately and accurately sets forth the existing knowledge of the birds of their chosen field, and our only criticism would question the advisability of introducing nomenclatorial novelties into a paper of this kind, or, for that matter, into a paper of any kind without a word of explanation for their adoption.—F. M. C.

PRELIMINARY CATALOGUE OF THE BIRDS OF CHAPEL HILL, N. C., WITH BRIEF NOTES ON SOME OF THE SPECIES. By T. GILBERT PEARSON. Journal of the Elisha Mitchell Scientific Society, XVI, pp. 33-51.

Professor Pearson presents this list as a basis for more extended observations on the birds of the region to which it relates. It enumerates 134 species, each of which is briefly annotated. Due conservatism is shown in excluding species of doubtful occurrence, and the *Spizella pallida* recorded by Atkinson from Chapel Hill in 1887, is shown to be a Swamp Sparrow!—F. M. C.

GLEANINGS FROM NATURE. By W. S. BLATCHLEY. Indianapolis, The Nature Study Publishing Co., 1899. 12mo. pp. 348; numerous illustrations. \$1.25.

This is a true outdoor book, with chapters on fishes, snakes, plants, birds, caves and cave animals, and essays on walks afield under such titles as 'Harbingers of Spring,' 'A Day in a Tamarack Swamp,' etc.

The bird student will find some sixty pages devoted to 'Twelve Winter Birds, while throughout the volume references are made to the birds observed, and under the heading of 'A Feathered Midget and its Nest' is an excellent account of the nesting of the Blue Gray Gnatcatcher. The book seems well designed to increase the pleasure and interests of an outing.—F. M. C.

BIRDS IN HORTICULTURE. By WILLIAM E. PRAEGER. A paper read before the State Horticultural Society, at Springfield, Ill., December 26, 1899.

The author of this paper is evidently thoroughly familiar with his subject and presents the results of the studies of economic ornithologists and entomologists in such a graphic and convincing manner that no one can read his remarks without being impressed by the incalculable value of birds to our agricultural interests.—F. M. C.

Bird-Lore

A Bi-monthly Magazine

Devoted to the Study and Protection of Birds

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

Published by THE MACMILLAN COMPANY

Vol. II APRIL, 1900 No. 2

SUBSCRIPTION RATES.

Price in the United States, Canada, and Mexico, twenty cents a number, one dollar a year, postage paid.

Subscriptions may be sent to the Publishers, at Englewood, New Jersey, or 66 Fifth avenue, New York City.

Price in all countries in the International Postal Union, twenty-five cents a number, one dollar and a quarter a year, postage paid. Foreign agents, MACMILLAN AND COMPANY, LTD., London.

COPYRIGHTED, 1900, BY FRANK M. CHAPMAN.

Bird-Lore's Motto:

A Bird in the Bush is Worth Two in the Hand.

THE amendment to the law designed to protect non-game birds by making the possession of their plumage an actionable offense, which was introduced into the New York assembly on January 15, 1900, by Assemblyman Hallock, representing the New York State Audubon Society, has been heartily endorsed by those genuinely interested in the preservation of our birds, and as strongly opposed by others who imagined, rightly or wrongly, that it would interfere with their own selfish interests.

One critic, a collector of bird skins for alleged scientific purposes, stated that, in his opinion, this measure was "a high-handed attempt to confiscate the property of numerous bird lovers throughout the country," and congratulated himself that his collection of 2,000 birds' skins was not within the State of New York.

No less solicitous of their own welfare were the numerous women who asserted that the passage of the law would make them liable to fine should they wear the feathers of prohibited birds.

These protests, however, amounted to nothing as compared with the very def-

inite and practical opposition which the proposed amendment encountered from Assemblyman Doughty, of Nassau county, a member of the Committee on Fisheries and Game. Mr. Doughty very plainly said that he thought the passage of this amendment would interfere with the business of his constituent and personal friend, Mr. Wilson, of Wantagh, Long Island, and that he should therefore do all he could to defeat it. It will be remembered that this Wilson is one of the largest dealers in native birds' skins in this country; and he it is who sends out bird-slaughtering expeditions along our coasts (see BIRD-LORE, December, 1899, page 198, and February, 1900, page 11).

Mr. Doughty's opposition was found to relate to the supposed protection by the amendment of Gulls and Terns. These birds, it seems, are Mr. Wilson's especial *desiderata* at present, and as his business interests are of more importance to his representative than abstract questions of bird protection, Mr. Doughty re-affirmed his intention of defeating the amendment. If, however, its proposers would except Gulls and Terns from its workings he would urge a favorable and prompt report on it by the Assembly Committee on Fisheries and Game.

As a matter of fact, the amendment affects only those birds the killing of which is prohibited at all seasons, and, as under the section of the law relating to web-footed wildfowl, Gulls and Terns may be killed on Long Island from October 1 to May 1, they do not come within the provisions of the amendment. As a means, therefore, of saving the measure from certain defeat, the representatives of the Audubon Society accorded Mr. Doughty a nominal victory by conceding a point of no legal significance.

In the Senate, however, the words "Gulls and Terns" were stricken out; the Assembly accepted the change, and there is every prospect of the bill being passed.

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 (President of the Audubon Society of the State of Connecticut), Fairfield, Conn., to whom all communications relating to the work of the Audubon and other Bird Protective Societies should be addressed. 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'

New Hampshire.....	MRS. F. W. BATCHELDER, Manchester.
Massachusetts.....	MISS HARRIET E. RICHARDS, care Boston Society of Natural History, Boston.
Rhode Island.....	MRS. H. T. GRANT, JR., 187 Bowen street, Providence.
Connecticut.....	MRS. WILLIAM BROWN GLOVER, Fairfield.
New York.....	MISS EMMA H. LOCKWOOD, 243 West Seventy-fifth street, New York City.
New Jersey.....	MISS ANNA HAVILAND, 53 Sandford Ave., Plainfield, N. J.
Pennsylvania.....	MRS. EDWARD ROBINS, 114 South Twenty-first street, Philadelphia.
District of Columbia.....	MRS. JOHN DEWHURST PATTEN, 3033 P street, Washington.
Maryland.....	MISS ANNE WESTON WHITNEY, 715 St. Paul Street, Baltimore.
Wheeling, W. Va. (branch of Pa. Society).....	ELIZABETH I. CUMMINS, 1314 Chapline street, Wheeling.
South Carolina.....	MISS S. A. SMYTH, Legare street, Charleston.
Florida.....	MRS. C. F. DOMMERICH, Maitland.
Ohio.....	MRS. D. Z. MCCLELLAND, 5265 Eastern Ave., Cincinnati.
Indiana.....	AMOS W. BUTLER, State House, Indianapolis.
Illinois.....	MISS MARY DRUMMOND, Wheaton.
Iowa.....	MRS. T. L. WALES, Keokuk.
Wisconsin.....	MRS. GEORGE W. PECKHAM, 646 Marshall street, Milwaukee.
Minnesota.....	MRS. J. P. ELMER, 314 West Third street, St. Paul.
Tennessee.....	MRS. C. C. CONNER, Ripley.
Texas.....	MISS CECILE SEINAS, 2008 Thirty-ninth street, Galveston.
California.....	MRS. GEORGE S. GAY, Redlands.

Fees and Pledges

Among the many perplexing problems that confront the organizers of bird protective societies, none are more fruitful sources of discussion and amiable disagreement than the question of to have, or not to have, fees and pledges.

It is a question, moreover, that may not be overlooked or set aside, as it involves two of the fundamentals of organization. Advocates for and against have equally plausible arguments, I grant, and yet, personally, I believe in fees—graded fees—and I do not believe in pledges—that is to say direct, cast iron ones. These qualifications need an explanation, and it will be more simple to consider the subjects separately—pledges first.

In asking people to cooperate in the cause of bird protection, the different methods of protection are usually fully set forth, and it must be evident to the

dullest adult mind that feather-wearing and nest-robbing are two acts totally incompatible with Audubon membership. Understanding this, and yet signifying the desire to join the society, is it either necessary or wise to force the applicant to sign a pledge? Whatever may be said for the system, one fact I know, and that is that there are hundreds of consistent people who, of their own volition, have abandoned the use of any feathers other than ostrich plumes and the wings of food birds. Is it logical to ask them to publicly promise not to do something that they have no intention of doing?

Then, too, there is something disagreeably coercive to the American mind in signing, or promising away, even the smallest fraction of its liberty of action. Some of the most intelligently temperate people I know, with the most decided ideas upon the liquor traffic question, would as soon cut off their right hands

as sign a total abstinence pledge or encourage their children so to do. As in this, so it is in Audubon matters, and the only way to do permanent good is, on one side, to educate the moral nature so that it will not desire to do the wrong act, and on the other to work for the establishment and *enforcement* of laws that shall punish those who do the wrong.

I emphasize *enforcement*; as to legislate for laws that manifestly cannot be enforced is about as senseless a task as the traditional one of sweeping the wind off the roof.

The only case in which the signing of a card, other than one containing name and address and general interest of the would-be member in the motives and work of the society, seems desirable, is that of the Associate Junior members, and the reason for this comes more properly under the head of fees.

FEEES

Two out of half a dozen reasons are sufficient to back the assertion that it is better to have fees—of a variety of grades to suit varied purses. Both reasons are intensely practical. 1. Money is absolutely necessary if the Audubon Societies are to do anything more than preach. 2. People feel a more keen personal interest in an object to which they have contributed something, no matter how small.

The oft repeated plea comes in at this juncture, "Is it logical to ask people, especially children, to pay for giving up something?" Yes, perfectly logical, if they regard the matter in the true missionary spirit, which, together with the idea of economic value of birds, is the real hold that Audubon work has upon the public.

"But people may desire to join, and lack even the money for a small fee," is the next objection. Any *adult* can give a small fee. Children, of course, in many cases, may not have more than a semi-occasional "candy penny" of which the sternest Audubonite would refuse to rob them, for a childhood deprived of its

striped peppermint stick can only result in crabbed old age. The graded fee system, ranging from \$25 to nothing, has a niche for this penniless class.

The fee system under which the Connecticut Society has run successfully for the two years of its life is as follows:

Patrons—Those members who pay \$25 at one time.

Sustaining Members—Those who pay \$5 annually.

Members—Those who pay \$1 once for all and no annual dues.

Teachers—Those who pay 25 cts. once for all and no annual dues.

Juniors—Those who pay 10 cts. once for all and no annual dues.

These five classes receive equally the certificate of membership, which is printed on India paper and is suitable for framing, and the Juniors in addition, now have the Audubon button. A sixth class has been recently added, copied from a similar grade of the New York Society, Associate Junior Members, who sign a card, "I promise not to harm our birds or their eggs and to protect our birds whenever I am able." No fee is required, and in lieu of the certificate, an Audubon button is given as a reminder of the work.

This sixth grade has not been current long enough to judge fairly of the results, but several cases have come to my notice of "We would rather pay and get the certificate, please."

The money so raised, given cheerfully and without pressure, has enabled the Connecticut Society to issue satisfactory Bird Day Programmes (last year to 4,500 teachers), equip three expensive free lecture outfits with lanterns, colored slides, etc., and pay all current expenses *without begging*.

If all societies can collect sufficient money by graded fees to furnish themselves with a regular campaigning plant and wage the pleasant and profitable battle of instruction in each Audubon State, in ten years either their work will be so well done that there will be no further

need for it, or, failing this, there will be nothing to protect. In either case the time is *now*, and the price of success is not only an expenditure of sense, sentiment, practical economics, legal ardor, but hard-headed, cold cash!

Fellow Audubonites, face this issue! Do not spend so much time in crawling around it and nibbling the edges.

A well known public educator of St. Paul writes me, "We have now so much available material for nature study in our schools that, within about ten years, we should have the spirit of destruction changed into a spirit of protection." Yes, and the Audubon Societies must have fees in order to mould this material into an attractive shape that will appeal to the child, through its eye for the beautiful, and not in a study form, to add its weight to the intolerable burden of "lessons."

When the societies can do this they will have forgotten such things as Pledges.—M. O. W.

Reports of Societies

ILLINOIS SOCIETY

The work of the Illinois Audubon Society has gone steadily on during the past year. There are regular monthly meetings of the directors held during eight months of the year, with meetings for members and the general public in the spring and fall. The speakers at the public meetings this last year have been Rev. Jenkin Lloyd Jones and Mr. Frank E. Sanford, of our own Society, and Prof. O. G. Libby, of Wisconsin.

New branch societies have been formed in several towns, but this part of our work grows slowly, the southern part of the state being, as yet, entirely untouched.

Bird Day is, unfortunately, not established by law, but was observed by many of the schools where the teachers were personally interested in the work. It is possibly a question to be considered whether the school work of the humane societies with their "Bands of Mercy," and the work of the Junior Audubon

Societies might not be united to the advantage of both, a multiplicity of pledges being unadvisable for children.

During the year new bird laws have been passed by our state legislature, conforming in many points to the model laws suggested by the A. O. U. Bird Protection committee. While we are thus fortunate in having reasonably good laws, the question of enforcing them seems a difficult one. "Test cases" will probably come sooner or later that will decide whether they are a "dead letter" or a "living epistle."

Thanks to the graceful and active pen of one of our directors, the subject of bird life is brought often to the notice of the public through the columns of the press, one recent result being the posting by two active bird lovers, of warnings to "all concerned," to leave unmolested the game up and down the wooded banks of the Desplaines river.

It is to be regretted that, in spite of game laws and Audubon Societies, birds are shot by men, in season and out of season, stoned by boys and worn by women. While we hear that the hats and bonnets of our women of the "middle-west" are not quite as bad as those of our eastern sisters, they are worse than they have been for years; though, perhaps, one sees fewer song birds.

Our present membership embraces some 772 adults and nearly 6,000 children, the latter being seemingly as difficult to count accurately as the birds themselves.

Since our spring meeting, April 13, we have sent out over 1,500 leaflets and are about sending out some 1,200 more. Only one new leaflet has been issued by the society during the year.

MARY DRUMMOND, *Sec'y.*

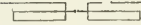
SOUTH CAROLINA SOCIETY

The South Carolina Audubon Society was organized at Charleston, January 4, 1900, with a membership of thirty-six. Miss Christie H. Poppenheim was elected president, and Miss L. A. Smyth, of Legare street, Charleston, secretary.

REFERENCES:

Importers and Traders National Bank, New York.
 Steiner Bros., Bankers, Birmingham, Ala.
 Henry Stern & Co., Boston, Mass.
 Henry Stern & Co., New Orleans.
 Crescent City Moss Ginney, New Orleans.
 Chas. Kahn, Jr. & Son, Cincinnati, Ohio.
 Peter Schneider Sons & Co., N. Y.
 John H. Lyon & Co., N. Y.
 K. Weiden, N. Y.
 Geo. B. Ritchie & Co., N. Y.

ESTABLISHED 1854.



LOUIS STERN,
 COMMISSION MERCHANT
 101 BEKMAN STREET,



BIRDS SHOULD LOOK LIKE THIS WHEN CURED.

New York, September 7th, 1899.

Below I hand you prices for the following articles in our market. I always obtain for Shippers the highest market price on the arrival of goods. I want for immediate shipment the very largest Grey Gulls.

LAUGHING GULL, prime, nicely cured, clean and dry round skins.	35	Blackheaded Least Terns prime, nicely cured, clean and dry round skins.	25
ROYAL TERNS, " " " " " " " " " "	35	Greyheaded " " " " " " " " " "	12
WILSON " " " " " " " " " "	35	BARN OWLS, " " " " " " " " " "	50
SEA SWALLOW, " " " " " " " " " "	35	OWLS of other species, (only large size) " " " " " "	25
WHITE SEA PIGEONS " " " " " " " " " "	10	GREBE SKINS, according to size and condition " " " " " "	10-30
BLACK SEA " " " " " " " " " "	8	HERRING and LAUGHING GULL WINGS, per pair,	15
HERRING GULL, (or Storm Gulls) " " " " " " " " " "	40	ROYAL TERN WINGS, " " " " " "	15

If you are not familiar with curing **ROUND BIRD SKINS**, as picture of bird shown above, cut the whole wing off close from the body and take out wing bone, and then cut open the other joints and remove all the meat—then sprinkle with either plaster or arsenic on the wing in its original shape closed, and expose, same until dry. Be sure and do not break or spread the wing, and do not ship bodies after cutting wings off the following birds, only Herring, Laughing Gull and Royal Terns.

Express Birds and Grebe Skins packed either in light cases, or packed nicely and wrapped in burlap, so as to reduce expense in expressing, and you can also forward small lots of birds by mail wrapped either in heavy paper or light cloth and well tied. I also solicit your valued shipments for **HONEY, WAX, WHITE HERON, (White Crane) EGRET PLUMES, LARGE BLUE CRANE SKINS WITH WINGS, ALLIGATOR SKINS, BEEF HIDES, GOAT, SHEEP, DEER SKINS and FUR.** Also **GREEN TURTLE and SALT WATER TER-RAPIN** to be shipped about the middle of November next.

I am, yours respectfully,

LOUIS STERN,
 101 BEKMAN STREET, New York City.

DON'T SHIP FOLLOWING: Small Blue Crane, Night Heron, Brown Egret, Surf Snipes, Water Turkey and Grosbeak.

Fac-simile, slightly reduced, of message-side of postal card sent out by feather dealer to Postmasters. It was the wholesale distribution of this, and similar circulars, which induced the Biological Survey, through the Department of Agriculture; to appeal to the Postmaster General to prohibit Postmasters from assisting feather dealers, with the gratifying results set forth below by Dr. Palmer, of the Biological Survey.

Protest against the Collection of Plume Birds through Postmasters

Some weeks ago the Department of Agriculture received information that preparations were being made to collect plume birds in large quantities in the Gulf States, and that cards had been sent out by a certain New York dealer to postmasters in the South, soliciting Gulls, Grebes, Owls, and other species now in demand for the millinery trade.

On January 27, 1900, the Secretary of Agriculture addressed a letter to the Postmaster General referring to the distribution of these cards, and requesting that postmasters be warned against aiding or engaging in the slaughter of birds. Attention was called to the State laws protecting birds, and especially to the acts of Florida and Texas prohibiting the killing of plume birds.

The Postmaster General promptly issued an order, directing the attention of post-

masters to this letter, in which they were "expressly enjoined against being parties to any transaction that violates State law." The order and letter were published in full in the 'Postal Guide' for February, and thus brought to the notice of post office officials throughout the country.

One energetic postmaster in Maine at once contributed an article on protecting plume birds to his local paper, and some of the daily papers in Philadelphia and Washington commented on the novel plume-bird order. Thus through the medium of the Post Office Department, the attention of nearly 75,000 postmasters has been called to the laws protecting birds and the methods of the plume trade, while the general public has received another warning of the urgent necessity for more effective measures to prevent our plume birds from being exterminated in the interests of the millinery trade.—T. S. PALMER.



RUFFED GROUSE ON NEST

Photographed from nature, by E. G. Tabor Meridian, N. Y.

Bird = Lore

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

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. II

JUNE, 1900

No. 3

Song-Birds in Europe and America*

BY ROBERT RIDGWAY

Curator of Birds, United States National Museum



IT has been repeatedly stated by writers who have had the opportunity of making the comparison, that the United States is very deficient in song-birds as compared with Europe—the British Islands in particular. One writer† even goes as far as to say that “it may be safely asserted that in the midland counties of England the Skylark alone, even in the month of March, sings more songs within the hearing of mankind than do all the songsters of the eastern United States”—which, of course, is an exaggeration. The same writer says: “It is, no doubt, very patriotic to prove that the woods and fields of North America are as vocal with bird song as those of England. The attempt has been made, but it is only necessary to cross the Atlantic, stay a month in the British Islands, and then return, taking frequent country walks on both sides of the water, to become convinced that the other side has all the advantage in quantity of bird song. Let us grant that the quality is equal—though it is difficult to understand where in America the peer of the Nightingale can be found—let us grant that the United States possesses a list of song-birds larger than that of the British Islands—all this does not prove that the quantity of bird song is greater. In England bird voices are everywhere. The Chaffinch is more abundant than the Sparrow save in the centers of cities, and his cheery notes can be heard at all times; the Robin Redbreast is common in suburb and village, and is not chary of his voice; and as for the Skylark—it is hard to go anywhere in the country without

*Parts of this article were published in the *Audubon Magazine*, Vol. I, 1887, page 127, but so much has been added and eliminated that in its present form it is essentially a different paper.

†W. H. Lockington, in *The Churchman*.

hearing them. How is it here? Does any one pretend that bird song is common in the suburbs of our cities? Do Robins and Catbirds, our most plentiful singing birds, often treat us to a song as we sit on the piazza of our semi-detached cottage, or as we walk adown the tree-lined streets?"

It is not stated in the article from which the above is quoted where the writer's observations in this country were made except that a "Pennsylvania wood" is incidentally referred to. It is difficult to believe, however, that he can have had much, if any, experience with more favored portions of our country, for his allegation certainly will not hold good for a large number of localities both east and west of the Alleghanies, however applicable it may be to the immediate vicinity of our larger eastern cities. His comparison is also unfair in that, while questioning the existence in America of any "peer of the Nightingale," he neglected to inquire where, in England—or the rest of Europe, for that matter—can be found even an approach to our Mockingbird,* although since it is tacitly granted that in the two countries the quality of bird song "is equal," we can afford to pass this by.

When we consider the unquestionable fact that in the eastern United States the number of species of song-birds is about twice as great as that belonging to the entire British Islands, there must, if the statement be true, be some reason why bird songs are so much more often heard there than here. The explanation seems to me very simple, three very different conditions which actually exist in the two countries being alone sufficient to produce the alleged result. These are: (1) the far more densely populated area of England, rendering it almost impossible for a bird to sing without being heard; (2) the greater protection there afforded song-birds in thickly settled districts; and (3) the conspicuous differences of climate, the moist and cool summers of England, permitting birds to be abroad and tuneful throughout the day, while our dry and scorching summer

*The special merit of the Mockingbird's song is popularly supposed to consist in its imitative character, but this is far from being true. The Mockingbird is not so confirmed an imitator as he is given credit (or discredit) for; and many individuals, and the very best songsters, of the species rarely, if ever, imitate. Their own notes are so infinitely varied that persons not sufficiently familiar with birds' notes erroneously suppose many of them to be imitations.

A Patagonian species of Mockingbird (*Mimus triurus*) may, or may not, be superior to ours as a songster. I very much doubt if its song excels that of the best performers among our species. This is what an Englishman has to say regarding it:

"When I first heard this bird sing I felt convinced that no other feathered songster on the globe could compare with it; for, besides the faculty of reproducing the songs of other species, which it possesses in common with the Virginia Mockingbird, it has a song of its own which I believed to be matchless; and in this belief I was confirmed when shortly after hearing it I visited England and found of how much less account than this Patagonian bird, which no poet has ever praised, were the sweetest of the famed melodists of the Old World." (W. H. HUDSON, Argentine Ornithology, Vol. I, p. 9.)

days compel our songsters to seek shelter and repose soon after sunrise, their singing being mostly done during the early morning hours, when people are sleeping most soundly!

In many thinly populated sections of our country thousands of bird songs are rarely heard by human ears. In the vicinity of all our cities, as well as most if not all of the smaller towns, the laws protecting song-birds are practically a 'dead letter,' the surrounding fields and woods being almost daily raided by the professional pot-hunter, the bird snarer, or boys with guns or bean-shooters.* In England, on the other hand, birds have for many generations been rigidly protected, until, in their almost absolute immunity from the perils to which they are in this country chiefly exposed, a much larger number have become accustomed to have confidence in mankind. Laws protecting all kinds of song-birds, and their nests and eggs, are there enforced with a strictness which is absolutely unknown in any portion of the United States: and, in numerous carefully policed public parks and thoroughfares and extensive private grounds, which ample wealth and long cultivation have made a veritable paradise for birds, they live in full knowledge of their security, with little to check their natural increase. The extreme scarcity of predatory birds and mammals, which have been for a long time nearly exterminated throughout England, has also assisted to bring about that affluence of bird-life which is so justly the pride of the English people.

The same abundance of bird-life could easily, by the same means, be secured in the United States. If anyone should doubt this, let him try the experiment and he will soon be convinced. I have done so for ten years, and the result was entirely satisfactory from the beginning, although the area upon which I could experiment was necessarily limited to my own grounds (only about half an acre in extent), and the birds have had much to contend with in the abundance of English Sparrows which continually harass the more domestic species, the frequent destruction of their eggs and young by red squirrels from an adjacent pine woods, and assassination by their arch enemies, the house cat and small boy, to which many birds that my wife and I had learned to know and love have fallen victims. All suburbs are more or less a "dumping ground" for superfluous city cats: ours is no exception to the rule, for these worse than useless creatures have at times fairly swarmed in our neighborhood. Of course we have done the best we could to protect the birds from these enemies, and with some success. We have also done all that

*This is certainly true of the suburbs of Washington, where the police force is not sufficient to properly patrol the outskirts of the city.

we could to attract them to our place: boxes and gourds (with holes too small to admit the English Sparrow) were placed here and there—the former on the veranda and on posts, the latter hung up in trees; shrubs, trees, and vines which bear their favorite fruits have been planted freely; and during the hot and dry season we place numerous pans and dishes in the shelter of the shrubbery, and these are kept filled with water for them to drink and bathe in. The result could scarcely have been more satisfactory, for the birds were quick to discover the preparations we had made for them, and each season they have increased in numbers and become more tame. We have House Wrens, Brown Thrashers, Catbirds, Chipping Sparrows, and Song Sparrows nesting within our grounds,* and each morning and evening dozens of Wood Thrushes, Vireos and other species from the adjacent woods and thickets visit the bathing dishes, several often disputing for the first bath. Here, in full view of the capitol dome, Washington monument, and other prominent buildings of the city, not less than thirty species of song-birds make their summer home in our immediate vicinity; not all of them are conspicuous songsters, but several of them are of the first rank and most of them are fairly common. Each morning in May and June and part of July we are awakened by a veritable flood of bird-melody, so loud, so rich, so ecstatic, that sleep would be impossible except to those who have no ear for sweet sounds or whose slumber is so deep that nothing short of a thunder-clap or earthquake would break it. This matin chorus is made up of many voices. There are Wood Thrushes (half-a-dozen or more), Brown Thrashers (several), Catbirds (several), a Robin or two, three or four House Wrens, a Carolina Wren, Cardinal, Chewink, Summer Tanager, Yellow-breasted Chat, Red-eyed, White-eyed, and Yellow-throated Vireos, Maryland Yellow-throat, Goldfinches, Song Sparrow, and Field Sparrow; also songsters of lesser merit, as Prairie Warbler, Chipping Sparrow and Ovenbird, though these are scarcely to be heard at all amid the din of louder voices. Besides these songsters, several other birds are heard whose notes are conspicuous, as the tender-voiced Wood Pewee, the cooing Dove, and the querulous Great-crested Fly-catcher. In all, more than twenty species of true songsters and fully three times as many individual singers.

This matin chorus begins with the break of dawn and ends after

*On the afternoon of June 26, 1898, in company with two ornithological friends, I made a census of the birds seen in my yard during about half an hour's observation. Exactly twenty species were counted, the list being as follows: Hummingbird, Wood Pewee, Wood Thrush, Brown Thrasher, Catbird, House Wren, Prairie Warbler, Ovenbird, Warbler, Red-eyed, White-eyed, and Yellow-throated Vireos, Summer Tanager, Goldfinch, Chipping Sparrow, Indigo Bird, Cardinal, Chewink, Crow Blackbird, and Flicker. Besides these four others (Crow, Fish Crow, Turkey Buzzard, and Chimney Swift) were seen flying overhead or near by.

sunrise. I have never timed its duration, and can only say that the bird songs heard by people who are astir at the ordinary morning hours can give no idea of the richness of the full orchestra. By the time the sun has risen high enough to sensibly increase the heat the concert has quite subsided, and is not renewed till dawn of the following day. Only three or four species persist in singing during our hot summer days; the Summer Tanager is the most conspicuous, both from the vigor of his song and the richness of his coloring—I have often seen him perched, at midday, on the summit of a tall tree, his rich vermilion plumage resplendent in the full glare of the blazing sun, as he carolled his robin-like song. The Red-eyed Vireo is another, who sings cheerfully all day long as he carefully searches for worms and spiders among the leafy branches. The Yellow-breasted Chat, too, amuses himself (and others) with his odd cat-calls and whistlings, the Indigo Bird sings his sprightly ditty, and the Field Sparrow his plaintive chant. But during the day bird songs are with us intermittent or desultory, and there is nothing like the chorus of early morning. Unless the weather be showery, there is only one prominent regular evening songster. Then the Wood Thrush is at his best. As the Thrushes begin to quiet down the Ovenbird, or Golden-crowned Thrush, begins his exquisite vesper warble (often repeated through the night), so utterly different from his monotonous daytime song that one not knowing the singer would never suspect that it was the same bird. All through the night, whether moonlight or dark, clear or rainy, the Chat seems to be wide awake; perhaps he sings in his sleep; however this may be, no bird, not even the Nightingale itself, can be a more regular and persistent nocturnal songster: indeed this bird does most of his singing at night, though unfortunately his performance is anything but melodious. During the breeding season other songsters occasionally break the stillness of night with a brief outburst of song, as if unable to repress their happiness even during sleep; but, unlike the Chat, they do not go beyond one or two such ebullitions.

In other parts of our country the writer has, on many occasions, heard, early on mornings in May and June, grand concerts of bird music, which probably would challenge comparison, both as to quality and quantity, with any to be heard in other portions of the world, excepting, probably, the highlands of Mexico, which are said, and probably with truth, to be without a rival in both number and quality of songsters. The following list is copied from my note-book, and was made during the progress of such a concert, the birds named singing simultaneously in my immediate vicinity. The locality was not a particularly favorable one, being two miles from a small village, and

at least three-fourths of the surroundings either heavy forest or wooded swamp. The date, May 12, and the locality southwestern Indiana: Four Cardinals, three Indigo Buntings, numerous American Goldfinches, one White-eyed Vireo, one Maryland Yellowthroat, one Field Sparrow, one Carolina Wren, one Tufted Titmouse, one Gray-cheeked Thrush, one Yellow-breasted Chat, one Louisiana Water Thrush, one Red-eyed Vireo, and two Mourning Doves—in all thirteen species, and at least twice that number of individuals. And here is a list of birds heard singing together one day in June, about the edge of a prairie in southern Illinois: Two Mockingbirds, one Brown Thrasher, three Yellow-breasted Chats, one Warbling Vireo, one Baltimore Oriole, several Meadowlarks, numerous Dickcissels and Henslow's and Grasshopper Sparrows, one Lark Sparrow, one Robin, one Towhee, one Catbird, one Wood Thrush, one Ovenbird, one Summer Tanager, several Tufted Titmice, one Red-eyed Vireo, one Bell's Vireo, one White-eyed Vireo, one Cardinal, one Indigo Bunting, two Maryland Yellowthroats, one Field Sparrow, and one Prairie Horned-Lark—the latter a true Lark, singing while suspended in mid-air, exactly in the manner of a Skylark; in all, twenty-five species and certainly not less than fifty individuals. Is such a rich medley of bird music often, if ever, excelled in England? It is true that neither the Skylark nor the Nightingale nor the Song Thrush were included, but they were each represented, and well represented, too; the first, if not by the Prairie Lark, whose manner of singing is identical, but whose song is comparatively feeble, then by the Meadowlark, of which Wilson—himself a Scotchman—says that, although it “cannot boast the *powers* of song” which distinguish the Skylark, “yet in richness of plumage as *well as sweetness of voice* * * * stands *eminently its superior*” (italics our own); the second by the Mockingbird, whose song is unrivalled for its combination of richness, variety, compass, volubility and vivacity; and the third by the Brown Thrasher, whose energetic, powerful and untiring melody is said to closely resemble in modulation that of the Song Thrush. Not less than half a dozen of the remaining species are songsters of very pronounced merit, probably equaling, in one quality or another of song, the best of European singers, excepting that celebrated trio, the Nightingale, Song Thrush and Skylark.

What Dr. Livingstone has said of African songsters applies equally well to those of the eastern United States, where the summers are of tropical character. “The birds of the tropics,” says he, “have generally been described as wanting in power of song. I was decidedly of opinion that this was not applicable to many parts of Londa, though birds there are remarkably scarce. Here [on the Zambesi,

below the falls] the chorus, or body of song, was not smaller in volume than it is in England * * * These African birds have not been wanting in song; they have only lacked poets to sing their praises, which ours have had from the time of Aristophanes downward. Ours have had both a classic and a modern interest to enhance their fame. *In hot, dry weather, or at midday when the sun is fierce, all are still; let, however, a good shower fall, and all burst forth at once into merry lays and loving courtship.*"

In the eastern United States, however, the true period of bird song is the early morning. The outburst of melody which follows a shower at midday or evening, joyous though it be, is no more to be compared with it than the tuning up of an orchestra with the full performance.* This oratorio of our birds seems to be a serious business with them, as if the observance of a religious duty.—a matin greeting to the orb of day.

*Not only do our birds sing more vigorously and joyously in the early morning, but their songs are at that time far more perfect than those heard during full daytime. I find this entry in my note-book: "May 26, 1888. Was awakened about 4.15 A. M. by the song of a Robin, which continued with only momentary pauses, as if for breath, till 4.30 (actual time), when it suddenly ceased and the Catbirds began practicing their pieces. The morning dark and misty, with dense fog covering the lowlands and all out-of-doors thoroughly saturated by the steady drizzling rains of several days past. As heard thus early in the morning, the Robin's song is really worth listening to, being free from those interruptions and harsh interpolations which characterize it at other times."



YOUNG LEAST FLYCATCHERS AND NEST

Photographed from nature, by P. B. Feabody, in Kittson Co., Minn.

The Kingfishers' Home Life

BY WILLIAM L. BAILY

With photographs from nature by the author



HOLE in a bank seems a strange place in which to build a nest, but although one may know it to be the home of a Kingfisher, he little imagines the singular course of the passage leading to the room at the other end, and is hardly aware of the six long weeks of faithful care bestowed by the parent birds upon their eggs and family.

Early in April we may hear the Kingfisher's voice, sounding like a policeman's rattle as he patrols the stream, and we often see him leaving a favorite limb, where he has been keeping watch for some innocent minnow in the water below. Off he goes in his slaty blue coat, shaking his rattle and showing his top-heavy crest, his abnormal bill and pure white collar.

The mother bird, as usual with the sex, does most of the work at home. The hole is generally located high up on the bank, is somewhat less than four inches in diameter, and varies from at least five to eight feet in length. It slightly ascends to the dark, mysterious den at the other end,—dark because the passage generally bends

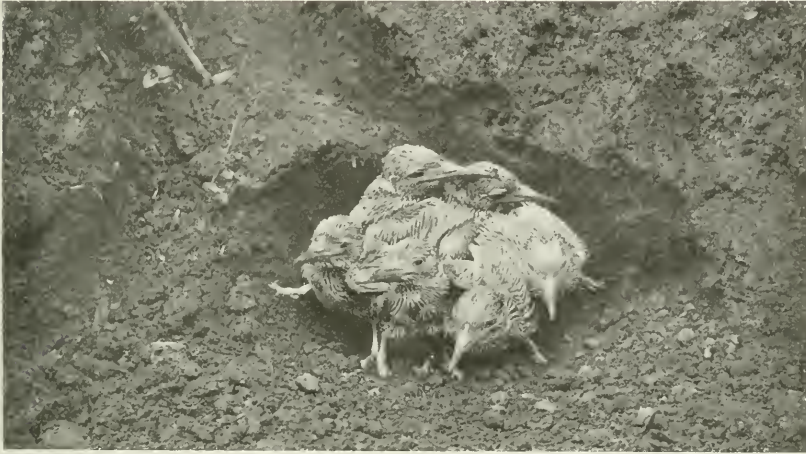


YOUNG KINGFISHERS, TWO DAYS OLD

once or twice, thereby entirely excluding the light. The roof of the passage is vaulted from end to end, merging into a domed ceiling almost as shapely as that of the Pantheon. Such a home is built to stay, and if undisturbed would endure for years. Two little tracks

are worn by the female's feet the full length of the tunnel, as she passes in and out.

The Kingfisher's knowledge of construction, her ingenious manner of hiding her eggs from molestation, and her constancy to her young, arouse our interest and admiration. We must also appreciate the



YOUNG KINGFISHERS, NINE DAYS OLD

difficulty with which the digging is attended, the meeting of frequent stones to block the work, which, by the way, may be the cause of the change in direction of the hole, but which I was inclined to believe intentional until I found a perfectly straight passage, in which a brood was successfully raised.

To get photographs of a series of the eggs and young was almost as difficult a task, I believe, as the Kingfisher had in making the hole. It was necessary to walk at least four miles and dig down to the back of the nest, through the bank above, and fill it in again four times without deranging the nest or frightening away the parent birds. But we are well repaid for the trouble, for the pictures accurately record what could not be described.

A photograph of the seven eggs was taken before they had even been touched, and numerous disgorgements of fish bones and scales show about the roomy apartment. The shapely domed ceiling, as well as the arch of the passage, is constructionally necessary for the safety of the occupants, the former being even more perfect than the pictures show. What is generally called instinct in birds has long since been to me a term used to explain what in reality is intelligence.

Some writer has mentioned that as soon as the young Kingfishers

are able, they wander about their little home until they are able to fly, but evidently his experience was limited. My four pictures of the young birds were taken by lifting them out of their nests and placing them in a proper place to be photographed in the light, but the first two pictures were taken in the positions in which they were naturally found in the nest. The first, when they were about two days old, was obtained on the 21st of May, 1899, and the young were not only found wrapped together in the nest, but the moment they were put on the ground, one at a time, though their eyes were still sealed, they immediately covered one another with their wings and wide bills, making such a tight ball that when any one shifted a leg, the whole mass would move like a single bird. This is a most



YOUNG KINGFISHERS, SIXTEEN DAYS OLD

sensible method of keeping warm, since the mother bird's legs are so short that she could not stand over them, but as they are protected from the wind and weather they have no need of her. Their appearance is comical in the extreme, and all out of proportion. This clinging to one another is apparently kept up for at least ten days, for a week later, when nine days old, they were found in exactly a similar position.

When the young were first observed they were absolutely naked, without the suggestion of a feather, and, unlike most young birds, showed no plumage of any kind until the regular final feathering, which was the same as that of the adult, began to appear. The growth of the birds was remarkably slow, and even when nine days old the feathers were just beginning to push through their tiny sheaths, but so distinctly showed their markings that I was able to distinguish the sexes by the coloring of the bands on the chest.

They did not open their mouths in the usual manner for food, but tried to pick up small objects from the ground, and one got another by his foot, as the picture shows. I took two other photographs the same day, showing several birds searching on the ground with their bills, as if they were already used to this manner of feeding.

When the birds were sixteen days old they had begun to look like formidable Kingfishers, with more shapely bills and crests, but as yet they evidently knew no use for their wings. They showed little temper, though they appeared to be somewhat surprised at being disturbed.

My next visit to the hole in the bank was when the birds were



YOUNG KINGFISHER, TWENTY-THREE DAYS OLD

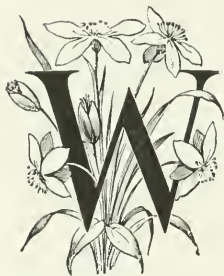
twenty-three days old, and, to ascertain whether they were still at home, I poked into the entrance of the hole a long, thin twig, which was quickly accepted by quite a strong bite. Taking the precaution to stop the hole with a good-sized stone, I proceeded to my digging for the last time on the top of the bank. This time I found the chamber had been moved, and I had some difficulty in locating it about a foot higher up and about the same distance to one side. The old birds had evidently discovered my imperfectly closed back door, and either mistrusted its security, or else a heavy rain had soaked down into the loosened earth and caused them to make alterations. They had completely closed up the old chamber and packed it tightly with earth and disgorged fish bones.

The skill with which they met this emergency was of unusual

interest, showing, again, the ingenuity and genuine intelligence which so often surprises us in the study of birds. Their home was kept perfectly clean by its constant care-taker. One of the full-grown birds, with every feather, as far as I could see, entirely developed, sat just long enough for me to photograph him, and then flew from the branch where I had placed him, down the stream and out of sight, loudly chattering like an old bird. One more bird performed the same feat, but before I was able to get him on my plate. The rest I left in the nest, and no doubt they were all in the open air that warm, sunny day, before nightfall.

Swallows and Feathers

BY LAURA G. PAGE



WHEN the Swallows returned, in the spring of 1897, they found me an invalid in a New Hampshire farm house. Every pleasant morning from the sunny piazza which fronted the south and looked out upon the barn, some rods away across the dooryard, I idly watched the birds as they flew in and out the great barn door or slipped through a broken pane in the window above.

One morning, soon after their arrival, a few of them flew down near the ground several times and tried to pick up a small feather. Then it occurred to me to try to help them. From a basket of feathers, in the woodshed close by, I took several and placed them on the grass a few yards from the piazza. No sooner had I resumed my seat than they were discovered. One Swallow had seen them and was flying swiftly back and forth above them, though lacking the courage to try to get one. After a moment he flew away to the barn, and soon came back with two others close behind him. He had evidently been to summon help. Thus reinforced, the three at once set about getting the feathers. First, one would dart swiftly across the yard, diving close to the ground as he went, and the others would follow in quick succession. This they repeated several times before one succeeded in seizing a feather. Then he triumphantly flew with it high into the air and headed for the barn, with both the other Swallows in hot pursuit. But he eluded them and disappeared through the door with his prize. After a few moments a company of Swallows came out of the barn and headed directly for the feathers, where the manœuvres were repeated.

After this I regularly provided feathers for them, and many an hour's entertainment did they furnish me, for I never tired of watching them.

They seldom failed to see a feather as soon as it was placed on the grass, and would begin to fly back and forth above it. At first they were a little shy and flew so rapidly they often missed their aim, but soon they learned to slacken speed as they dived for the feathers and would seize one nearly every time. I gradually decreased the distance from the piazza until, finally, they would come within three feet of me for them. They always took them on the wing, never alighting to pick them up.

It was an interesting sight when the successful bird was chased by the rest of the crowd. They usually came in squads of from three to six, and, in trying for the feathers, would fly in rapid succession, one after the other, each diving to the ground as he passed by. But as soon as one bird got a feather the others would all leave the field and give chase, and many a time they would press him so hard that in turning this way and that to evade them, the feather would slip from his beak. Then there was a whirling and scrambling for it! Sometimes the owner would catch it again, but more often another bird would snatch it and fly away, only to be pursued in his turn. I have seen a feather dropped and seized three or four times before the barn door was reached.

When the wind blew it was hard for a Swallow burdened with a feather to make headway against it. Often it would be wrested from his grasp and go sailing away in the air, only to be caught again and borne onward. Sometimes, if the bird had a firm hold of it, he would be turned completely around and even forced to fly backward for a moment.

One of the small 'shoe-shops' so common throughout some sections of New Hampshire thirty years ago, stood not far from the piazza, and to this low roof the Swallow would frequently carry his prize; here he would stop, turn the feather about or lay it down while he took a firmer hold of it, seizing it squarely in the middle. The other birds would alight on the roof near him, watching intently but not offering to touch it, until he was again on the wing, when they would instantly give chase.

Their selection of feathers was especially interesting: every Swallow tried for the largest. When several were put out at one time the smallest ones were always left till the last. In regard to color they were equally particular. At first I selected for them the softest and downiest feathers, whether brown or black or white; but the birds invariably chose the white ones and often refused the dark colors altogether.

After a time, instead of placing the feathers on the ground, I would toss one into the air for them as they approached. This pleased them best of all, and they seldom missed one unless the wind carried it back under the piazza, when in their frantic attempts to catch it ere it fell, the whirl of wings would beat almost in my face. One day I saw a Swallow sitting on the weather vane which surmounted the barn, and tossed out a feather, wondering if he would notice it. The instant it left my hand he darted like an arrow across the dooryard, seized it before it touched the ground, and made off with it to the barn.

My appearance on the piazza was the signal for their approach. They seemed to be watching for me and would start at once toward the house, making a peculiar noise. Many a morning on going out I have found them flying to and fro before the door, calling for me, and the instant a feather was tossed in the air they would all dive for it, often coming close to me. Several attempts to have them take one from my hand were never quite successful; they would look longingly at it and fly back and forth *almost* near enough, but in the end their courage always failed them.

They were chiefly Barn Swallows, with their chestnut throats, glossy blue backs and forked tails, that came about the door. Occasionally a White-bellied, or Tree Swallow, or a Bank Swallow, in his dusky coat, would join the procession, circling swiftly before me; and a few times Eave Swallows were seen among the rest, the whitish crescent on the forehead making them easily conspicuous.

A surprisingly large number of feathers were carried off. One lady remarked that if they were all used for lining the nests the young ones would certainly be smothered. The morning was the busiest time, though occasionally the birds would come for them late in the afternoon.

For nearly three weeks this activity continued, but toward the end of May their visits became less frequent and with the coming of summer their time was given to feeding the young, whose heads could be seen protruding from every nest in the barn.



For Teachers and Students

How to Conduct Field Classes

BY FLORENCE MERRIAM BAILEY, Washington, D. C.



So far back as 1886, when the Audubon movement was just beginning, the Smith College girls took to 'birding.' Before the birding began, however, behind the scenes, the two amateur ornithologists of the student body had laid deep, wily schemes. "Go to," said they; "we will start an Audubon Society. The birds must be protected; we must persuade the girls not to wear feathers on their hats." "We won't say too much about hats, though," these plotters went on. "We'll take the girls afield, and let them get acquainted with the birds. Then, of inborn necessity, they will wear feathers never more." So these guileful persons, having formally organized a Smith College Audubon Society for the Protection of Birds, put on their sunhats and called, "Come on, girls!" This they did with glee in their hearts, for it irked them to proclaim, "Behold, see, meditate upon this monster evil," while it gave them joy to say, "Come out under the sun-filled heavens and open your soul to the song of the Lark."

This, then, was the inspiration of the bird work that started up and spread so surprisingly, and was carried on with such eager enthusiasm in those early days at Smith. And this must be the inspiration of all successful field work, wherever it is done. A list of species is good to have, but without a knowledge of the birds themselves, it is like Emerson's Sparrow brought home without the river and sky. The true naturalist, like Audubon, will ever go to nature with open heart as well as mind.

Feeling this, the organizers of the Smith work persuaded John Burroughs to come to give it an impetus. When he took the girls to the woods at five o'clock in the morning, so many went that the bird had often flown before the rear guard arrived, but the fine enthusiasm of the man's spirit could not be missed. No one could come in touch with it without realizing that there was something in nature unguessed before, and worth attending to. And when the philosopher stood calmly beside a stump in the rain, naming unerringly each bird that crossed the sky, the lesson in observation, impressive as it was, was not merely one in keenness of vision. His attitude of stillness under the heavens made each one feel that 'by

lowly listening' she too might hear the right word—the message nature holds for each human heart.

This is important to emphasize now, when bird work, undertaken at first by nature lovers in a spirit of enthusiasm, is now, from its value, coming to take rank with other nature studies and be reduced to their formal basis. In learning the Latin names, let us not forget the live bird. The advance of ornithology, as well as our own good, demands this, for while the Latin names are already set down in the books, the knowledge of the life histories of even our common birds is painfully meager. Sympathetic, trustworthy observation and record of the habits of the living bird is what is most needed now.

Individual work is, of course, richest in results, but the enthusiasm roused by field classes should lead to that. In individual work the habits of the student will prevail. In field classes the plan followed will be modified by the possibilities in each case, for the classes will not always be formal ones, connected with a university course. At Smith, for instance, where the work was wholly apart from the curriculum, it was impossible for the two leaders to take out all those who wanted to go birding, so picking out the best observers, the leaders gave them special training, so that they were able to take out classes themselves. While perilous in one way—may the birds forgive the names given them!—this plan succeeded in giving a larger number an insight into nature work, and when at the end of the spring, the girls exclaimed with earnest gratitude that their eyes and ears had been unsealed, that a new world had been opened to them, it seemed that the work had not been in vain.

And since the college days I have learned that even a single walk afield may be worth while. On one such walk in New England, taken while the dew was on, at half past six by the town clock, the class included a man on a bicycle, two women in a carriage, and a blind lady. But the songs identified for the quick-eared blind lady, and the new interest put within the reach of those who could only ride to the woods, was surely worth the effort.

Regular classes are, of course, much more satisfactory in every way, for the student teacher is always haunted by the desire for results. When one can choose, field classes should begin in early spring, not too early, when the distracted leader drags her class miles over hill and dale to find one Junco, and comes home with a horrible feeling that it was all her fault the birds disregarded the calendar! Not too early, but not too late. Just early enough to find a few of the first spring birds, enough to arouse enthusiasm without giving the discouragement that comes to a beginner with the later confusion of tongues. In this event, even if the class meets but once a week,

a good object lesson will be given in migration, and the excitement of the new arrivals discovered at each outing will often lead to individual migration work between the meetings of the class.

If one must begin field work after the bulk of the birds have come, concentrate attention upon those most in evidence, or upon those which will make the most distinct impression upon the beginner. If you have a Scarlet Tanager and a flock of Warblers to choose from, let the class look at the Tanager. They will in spite of you, unless forcibly removed, but it is much better that they should. The wonderful color of the Tanager, his curious call, his thrilling song, the marvelously protective leaf tints of his mate, if she be near, will make an indelible impression upon them, and by rousing interest, lead eventually to the patient study of the obscure tree-top haunting Warblers. It requires no little moral effort for a class leader to stand quietly and look at even a Tanager when the trees are alive with Warblers she is eager to study, but, as in bringing up children, the training you have to give yourself is the biggest part. You must hold in abeyance all your own student instincts, and if your class is at the Chipping Sparrow stage, be content to fix your eyes on a Chipping Sparrow in the path when a bird you have never seen before is disappearing over the tree-tops. The one vital point is to *keep the class interested*, and if the interest would be killed by half an hour's chase after a bird in the underbrush, you must not go. Simply devote yourself to supplying material, the plainest of everyday birds, if they are the ones best fitted to the stage of training reached by the observer at that time.

The familiar rule, "Go to a good birdy place and sit down till the birds come," is one of the best of all field rules—with modifications. You cannot expect the beginner to penetrate to the heart of the woods and sit contentedly two hours gazing up at a hole in a tree trunk while the owner is brooding her eggs out of sight inside, and her mate roaming the forest; but by interspersing a judicious amount of tramping, even with the certain knowledge that unnoted birds are flying before you in all directions, your class will be well content to sit down and let the birds gather in the birdy places which you have chosen for them. And you need not begrudge the tramping, for to some classes whose acquaintance with afternoon teas is greater than with briar patches, jumping ditches and creeping under barbed-wire fences is valuable training.

The quiz method in field work, as in the class room, is the best. Stimulate thought; don't cram your pupils with statistics. But while teaching them to see for themselves, teach them to see the right things and, in obedience to the pedagogical rules, by constant com-

parison and repetition, and every possible device, impress the important characters of the different families and species. Compare tirelessly the red cap of the Chipping Sparrow, the spot on the breast of the Song Sparrow, the rufous back and red bill of the Field, the white throat and striped crown of the White-throat; the trill of the Chippy, the flowing song of the Song Sparrow, the characteristic whistles of the Field and White-throat; contrast the short wings, strong, conical, seed-cracking bills, and labored flight of the Sparrows with the long wings, weak, fly-catching bills, and free flight of the Swallows; calling attention to the musical songs of the Sparrows and the monosyllabic notes of the Flycatchers, and carrying out similar comparisons for each family seen in the field.

Out of doors, so many birds are of necessity seen in passing, that when field classes are not connected with house classes it is a great help to carry a box of skins—as much as possible those which will probably be seen on the day's walk—and before coming home review the birds seen by sitting down in the woods to examine the skins. It is also a good plan to carry a bird book afield—the pocket edition of Chapman's Handbook admirably serves this purpose—that the observer may look up doubtful points for himself while his mind is still full of questions.

Although the quiz method is the best, when the birds are flying about rapidly one cannot always wait for the untrained observer to seize upon the important characters. At such times a quick word will concentrate attention upon the salient feature, and the young observer can do his part afterwards by a note book sketch or memorandum. As a Brown Creeper rocks his way up a tree trunk in sight before passing on to one out of sight, quickly call attention to his protective tree trunk color, the adaptation of his curved bill and his long pointed tail, comparing him with the Sparrow seen before—the other brown bird—brown for his life on the ground and among the weeds, comparing, also, the Creeper's long, curved, insect-extracting bill with that of the Sparrows, and his climbing tail with the steering apparatus of the Sparrow. Then, for individuality, his systematic method of hunting, with that of the Woodpeckers. A line in the note book will show the curve of the bill, a slanted arrow between two vertical lines the oblique flight from the top of one tree to the bottom of the next. A horizontal breast line and an outline tail with white outer tail feathers opposite the name Junco will suggest the marking that disguises the Snowbird's form and also his directive tail mark; a chip-churr opposite the name Tanager and the words red and green will bring to mind the characteristic call and the sexual coloration of the pair; a musical phrase opposite

the name Chickadee will interest the musical student, while a rough outline sketch of the crest of the Waxwing, erect and flattened, will recall the bird's striking expression of emotion. Brief notes like these will serve to keep the observers' minds alert, and taken with their list of species seen, give something to distinguish and classify their birds by, on the return home.

Even with the superficial study of the field class, one will get hints of individual variation in song and habit. When in the field during the nesting season, the class leader should keep as large a calling list as possible, only taking care to guard the feelings of the timid householders. Nothing gives such a good idea of the bird's range of expression in movement, call, note, and song, and of its general intelligence and individuality, or awakens such sympathetic interest in bird life, as consecutive visits to a young family. These should be from the time of the building, when the happy pair are seen working together with rare skill upon their home, through the brooding, when the male feeds his mate and sings to her on the nest, or takes her place while she rests, to the days when the two are again working together caring for their hungry nestlings, and risking their lives, if need be, to guard them from harm.

I remember the delight of a class of Miss Porter's girls at Farmington over the discovery of a Kingfisher's nest in the river bank, and their enthusiasm over the pretty Redstart who would sit calmly in her nest over our heads as we looked up admiringly at her. And I also remember the satisfaction of a class of Hull House girls in their summer vacation home, over the old stub where the Red-headed Woodpeckers were feeding their young. While studying nests, a good way to rouse interest in individual work is to get the students to take photographs of the birds on their nests, for a great deal must necessarily be learned of 'bird ways,' before any good photographic results can be obtained.

Bird Study at Wood's Holl Marine Biological Laboratory

THE Nature-Study course to be inaugurated during the coming summer at Wood's Holl includes a course on birds under the direction of Dr. Thomas H. Montgomery, Jr., assisted by Drs. Whitman and Herrick and Messrs. Stone, Dearborn and Chapman. It will include field and laboratory work and lectures. In field work particular attention will be given to the habits of birds, their songs, modes of flight, etc., and each student will be required to keep a journal of observations.

For Young Observers



THE ORIGIN OF DICK CISSEL

Sir Richard Cecil was a knight of very high degree.

He came to preach some English fad in North Amerikey;

But a clever Indian medicine man transformed him to a bird,

With the funniest, drollest, dryest note that ever yet was heard:

And now he sings the livelong day, from mullein top or thistle,

The first of his intended speech, "Oh I am Dick, Dick Cissel."

ERNEST SETON-THOMPSON.



Notes from Field and Study

A Home-Loving Osprey

For several years the Ospreys whose nest is here figured built in a dead oak, in the pasture on the left, about a hundred feet from the road shown in the photograph, but when the property recently came into the possession of a new



OSPREYS' NEST

Photographed from nature by H. S. Hathaway

owner, he had the tree cut down, and in the spring of 1899 the birds started a nest on a pole nearer to the house than the one on which it is placed in the picture.

On this pole, however, there was a 'converter,' which the nest so interfered with that the owner had to tear the nest down. Then the birds repaired to the pole occupied in the photograph. I have learned that they did not rear a brood, but seemed very nervous, and would sit only for short periods.

The nest, as may be seen, is on a highway leading from the main road to the shore, and is placed on a pole carrying electric light wires to the house in the photograph. It is situated at Warwick Neck, R. I.—H. S. HATHAWAY, Providence, R. I.

Nesting of the Prothonotary Warbler

One of the most common birds of northeastern Louisiana is the Prothonotary Warbler. It can always be found in considerable numbers along the numerous bayous and lakes in this part of the State, but particularly in the large cypress swamps. I have found it nesting in all kinds of places. The most common place, however, is in knot-holes in fallen cypress logs. I have found the nests, also, in holes and corners in a large barn, also in rail fences, deserted Woodpecker holes, and in bird boxes.

These birds are very sociable, and come around the farm houses very often to build their nests. A good nesting place is very reluctantly deserted, and the birds will build their nests in the same hole year after year, even though disturbed.

Three nests in particular, I remember, were robbed year after year, two by snakes and one by a cat. The first one was under a large bridge, where there was a square hole in one of the posts, three feet above the running water; the second was in a square hole in a large post, supporting a Pigeon house, and the third was in a hanging flower box at the end of the piazza.

The nests of the Lettuce Bird, as it is commonly called here, are made from green moss, feathers, and any sort of soft material. The outside is always covered with green bark moss, and it is lined with horse hair—ALBERT GANIER, Vicksburg, Miss.

The House Wren as a Depredator

Troglodytes aedon has made for himself a bad name in my immediate vicinage. One object in telling of his bad deeds is to find out if they are peculiar to this individual, as I trust may prove true, or whether other observers have had a like experience.

My Wren is a depredator; not a robber, but a spoiler. He does not take

other birds' eggs and eat them. He pierces them with his sharp little bill and throws them out of the nest.

My direct knowledge of this fact comes from his treatment of the Chipping Sparrow. I have seen the Wren throw the eggs of the latter out of the nest. My Wren-box is nailed against the lattice at the west end of a back piazza, where this lattice meets the side of the house. The place is really more a covered walk than a piazza, having on its outer side a long trellis covered with the wild ampe-lopis. The Chipping Sparrows have taken this as a favorite building place, sometimes two pairs of them having their nests there at the same time. But whether these confiding 'chippies' build nearby to the brown spit-fire or farther away—even twenty feet off—he or she will not suffer them to go unmolested.

The Wrens have also taken the eggs from the nest of a Chipping Sparrow which built quite on the opposite side of the house.

Besides this direct evidence, I have also other which is circumstantial, but such circumstantial evidence as the bird-lover learns to put a high value upon. It is this: My Bluebirds chase the Wren,—crying, "stop thief, stop thief!" whenever they see him in the open. So also does my Baltimore Oriole, who returns to his elm on my premises every year. That the Robins do not chase the Grackles without reason we know and they know, to our mutual sorrow. I fear that the inference must stand in the case of these other birds and the House Wren. It is becoming a serious issue with me just what to do. I love the rollicking song of my fidgety Wrens. But I love, also, the quiet, patient *Spizella socialis*, even if she does seem to be lacking in gumption as to the locating of her nest, and even if one does feel occasionally, as he does with some unemotional people, as if he would like to stick a pin point into her and wake her up.

My Bluebirds also left me last summer, the first time in four years. I have a

strong suspicion that the small marauder of this paper had something to do with their failure to return, and the question is whether I shall be compelled to take down my Wren-box.—JOHN HUTCHINS, *Litchfield, Conn.*

A New Camera for Bird Photographers

Bird photographers will be interested to learn that essentially the same type of camera described by Mr. Rowley, in BIRD-LORE for April, has been placed on the market by the Reflex Camera Company, of Yonkers, N. Y.

The Bird Protection Fund

Since the report of the Treasurer of this fund, in BIRD-LORE for April, additional subscriptions have been received, and the fund now amounts to \$7,300.

Every colony of Gulls and Terns that has been found from Virginia to Maine has been provided with a protector, and will receive all the protection that the laws of the various states in which they are located afford them. For one large colony of Herring Gulls and Terns in Maine, a warden has been employed who devotes his entire time to the work. At all the other colonies, only so much of the warden's time is engaged as will afford the necessary protection.

There is every reason to believe that all of the Gulls and Terns that breed between Virginia and Maine will, this year, be permitted to raise their young without being disturbed.

It is purposed that all of the breeding colonies shall be visited at the height of the breeding season by some member of the American Ornithologists' Union, who will inspect the work done by the protectors, and note the condition of the colonies —WILLIAM DUTCHER, *525 Manhattan avenue, New York City.*

Arbor and Bird Day Proclamation

The Governor of the State of Wisconsin has issued an elaborately printed Arbor and Bird Day proclamation well calculated to attract attention to the importance of the occasion which it announces.

Book News and Reviews

BRITISH BIRDS' NESTS, HOW, WHERE, AND WHEN TO FIND AND IDENTIFY THEM. By R. KEARTON, F. Z. S., with an Introduction by R. BOWDLER SHARPE, LL.D. Illustrated from photographs by C. Kearton. Cassell & Co. Ltd. London, Paris, New York and Melbourne. 1898. 8vo, pp. xx + 368. Numerous half-tones.

OUR RARER BRITISH BREEDING BIRDS. THEIR NESTS, EGGS AND SUMMER HAUNTS. By RICHARD KEARTON, F. Z. S. Illustrated from photographs by C. Kearton. Cassell & Co. Ltd. London, Paris, New York and Melbourne, 1899. 8vo, pp. xvi + 149. Numerous half-tones.

In the first of these volumes, under an alphabetical arrangement, the authors describe and present photographs from nature of the nests of the British birds with whose breeding habits they were familiar at the time of its publication. In the second volume are included pictures of the nests, eggs or breeding haunts of nearly sixty species not pictorially represented in their earlier work, in the gathering of which the authors' journeys in England, Scotland, Ireland and Wales, footed up a total of about 10,000 miles.

The second work is, therefore, virtually a supplement to the first, and the two together constitute a practically complete guide to the subject of which they treat. The amount of labor involved in securing the material for these books can be appreciated only by the experienced; but that it is justified by the results must be admitted by everyone who compares these actual representations of the breeding haunts, nesting-sites, nests and eggs themselves, with the stereotyped phraseology and often execrably colored lithographs of egg-shells of the older oölogies.

In their later volume the authors write from a broad experience of the need and methods of bird protection; and in numerous instances do not mention the localities in which they have found certain



From Kearton's 'Rarer British Breeding Birds'

DABCHICK'S NEST UNCOVERED

rare species breeding, for fear they will be exterminated by egg collectors. What a comment on the greed of the average oölogist! — F. M. C.

CALIFORNIA WATER BIRDS.—No. IV. VICINITY OF MONTEREY IN AUTUMN. By LEVERETT M. LOOMIS. Proc. Calif. Acad. Sciences. Third Series. Vol. II, No. 3, pp. 277-322.

In this paper Mr. Loomis continues his valuable studies of the movements of Water Birds off the coast of California, the period covered being from September 18 to November 14. A detailed account of the observations made is presented under dates and is followed by certain "conclusions" on various phenomena of bird migration under the headings 'Migration Northward After Breeding Season,' 'Guidance by Physical Phenomena,' 'Guidance by Old Birds,' 'Cause of Migration.'

Mr. Loomis' well-deserved reputation as a careful and discerning field ornithologist makes his observations an important contribution to our knowledge of existing conditions of bird migration, but in theorizing on the origin and manner of migration, he falls into the common error of attempting to explain the origin of a habit whose root is fixed in a past geological age, and whose growth has been governed by a thousand influences we know not of, by its present day manifestations—the last buds on the branch.

A study of the origin of bird migration must begin with the origin of flight itself: a faculty which provided the bird with a means of extending its range into regions made habitable by increased solar heat during a portion of each year. From this as a starting point and with the aid of data as yet to be furnished by the paleontologist, climatologist, geologist, and psychologist, the ornithologist may perhaps reason from cause to effect. In the meantime we cannot have too many studies of just the kind Mr. Loomis is making.—F. M. C.

BIRD STUDIES WITH A CAMERA. WITH INTRODUCTORY CHAPTERS ON THE OUTFIT AND METHODS OF THE BIRD PHOTOGRAPHER. By FRANK M. CHAPMAN. Illustrated with over 100 photographs from nature by the Author. D. Appleton & Co., New York City. 1900. 12mo. Pages xvi + 218. Numerous half-tones. \$1.75. The Author of "Bird Studies With a

Camera" is, without doubt, the best equipped writer in the country to handle the subject of bird photography, he holding the same place in America that the Kearton Brothers occupy in Great Britain. With a pleasing modesty in his preface, he claims for his book nothing more than "a contribution to an end," yet no amateur or professional photographer who reads its pages will fail to obtain many valuable hints which will prevent hours of wasted time, and loss of material and effort.

The introductory chapter treats of the scientific value and charm of bird photography, followed by an exhaustive review of "The Outfit and Methods of the Bird Photographer." An intelligent study of this chapter will not fail to direct any one who attempts nature study with a camera into a much smoother path than he could find for himself.

The remaining chapters are devoted to the field experiences of the author while securing the large series of bird photographs with which the volume is illustrated.

These experiences are told in such a pleasing and explicit way that the reader involuntarily wonders why *he* has never seen these charms in nature, and mentally thanks the author for showing him how to get nearer to nature's heart.

The volume merits a place in every home, because it advocates a love for and intimate knowledge of wild bird-life, and also because it will prove a boon to the thousands of amateur photographers of this country, by introducing them into the hitherto unknown paradise of animate nature.—W. D.

Book News

THE April number of 'The Mayflower,' published by John Lewis Childs at Floral Park, L. I., appears with a department devoted to bird study, in which the editor takes a strong and commendable stand on the question of the destruction of birds for millinery purposes.

Bird-Lore

A Bi-monthly Magazine

Devoted to the Study and Protection of Birds

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

Published by THE MACMILLAN COMPANY

Vol. II JUNE, 1900 No. 3

SUBSCRIPTION RATES.

Price in the United States, Canada, and Mexico, twenty cents a number, one dollar a year, postage paid.

Subscriptions may be sent to the Publishers, at Englewood, New Jersey, or 66 Fifth avenue, New York City.

Price in all countries in the International Postal Union, twenty-five cents a number, one dollar and a quarter a year, postage paid. Foreign agents, MACMILLAN AND COMPANY, LTD., London.

COPYRIGHTED, 1900, BY FRANK M. CHAPMAN.

Bird-Lore's Motto:

A Bird in the Bush is Worth Two in the Hand.

On page 98 we print a communication from the Millinery Merchants' Protective Association, the importance of which is obvious. It is addressed to William Dutcher and Witmer Stone, as representatives of the American Ornithologists' Union, and to the Audubon Societies, through the editor of this magazine. As the Audubon Societies, unfortunately, have no Federated Committee to which this matter could be referred for action, it will be necessary for each Society to consider the Milliners' proposition independently. It is, therefore, requested that the matter receive the prompt and careful consideration which it so evidently deserves, and that the result of such consideration be communicated to the Editor of BIRD-LORE for transmission to the Secretary of the Milliners' Association.

Without attempting to weigh the merits of the proposed agreement, we would call the attention of the Audubon Societies to two points:

First. No definite time is mentioned when the plumage of North American birds will not be used by milliners, but on calling the attention of the Secretary of their association to this omission, he

states that two fall seasons will be required to fully dispose of the stock on hand, and names January 1, 1902, as the final date when North American birds will be used by the members of the Milliners' Association.

Second. The Audubon Societies are asked only to use their best efforts to prevent the passage of laws prohibiting the use of the feathers of the "barnyard fowl, edible birds and game birds killed in their season, and all birds which are not North American birds." Doubtless many members of the Audubon Societies believe that foreign birds are fully as deserving of protection as are North American birds, and without for a moment denying the justice of the claim, we would ask them whether it is possible for us to make laws protecting foreign birds, and if, as we believe, it is not, should we sacrifice North American birds to a fruitless principle?

We cannot hope to abolish the trade in feathers, but if, by a concession, we can so control it that our native birds shall be exempt from its demands, we shall have afforded them a measure of protection we had not expected to secure in this generation nor the next.

We therefore bespeak for the Milliners' proposition such fair and unbiased treatment as will enable us to avail ourselves of its benefits.

ASSEMBLYMAN HALLOCK deserves the thanks of all bird lovers for his efforts in securing the passage of the amendment to the law protecting non-game birds, which makes the sale or possession for sale of any part of certain protected birds an actionable offence. The enforcement of this law will assure complete protection for song-birds from the demands of commerce.

The Lacey bill passed Congress by a vote of 141 to 27. The bill (No. 6634) has been referred to the Senate Committee on Interstate Commerce, and it is hoped that all bird lovers will write Hon. Shelby M. Cullom, Chairman of this Committee, urging its passage without amendment.

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 (President of the Audubon Society of the State of Connecticut), Fairfield, Conn., to whom all communications relating to the work of the Audubon and other Bird Protective Societies should be addressed. 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'

New Hampshire.....	MRS. F. W. BATCHELDER, Manchester.
Massachusetts.....	MISS HARRIET E. RICHARDS, care Boston Society of Natural History, Boston.
Rhode Island.....	MRS. H. T. GRANT, JR., 187 Bowen street, Providence.
Connecticut.....	MRS. WILLIAM BROWN GLOVER, Fairfield.
New York.....	MISS EMMA H. LOCKWOOD, 243 West Seventy-fifth street, New York City.
New Jersey.....	MISS ANNA HAVILAND, 53 Sandford Ave., Plainfield, N. J.
Pennsylvania.....	MRS. EDWARD ROBINS, 114 South Twenty-first street, Philadelphia.
District of Columbia.....	MRS. JOHN DEWHURST PATTEN, 3033 P street, Washington.
Delaware.....	MRS. WM. S. HILLES, Delamore place, Wilmington.
Maryland.....	MISS ANNE WESTON WHITNEY, 715 St. Paul Street, Baltimore.
South Carolina.....	MISS S. A. SMYTH, Legare street, Charleston.
Florida.....	MRS. C. F. DOMMERICH, Maitland.
Ohio.....	MRS. D. Z. McCLELLAND, 5265 Eastern Ave., Cincinnati.
Indiana.....	AMOS W. BUTLER, State House, Indianapolis.
Illinois.....	MISS MARY DRUMMOND, Wheaton.
Iowa.....	MRS. T. L. WALES, Keokuk.
Wisconsin.....	MRS. GEORGE W. PECKHAM, 646 Marshall street, Milwaukee.
Minnesota.....	MRS. J. P. ELMER, 314 West Third street, St. Paul.
Kentucky.....	INGRAM CROCKETT, Henderson.
Tennessee.....	MRS. C. C. CONNER, Ripley.
Texas.....	MISS CECILE SEIKAS, 2008 Thirty-ninth street, Galveston.
California.....	MRS. GEORGE S. GAY, Redlands.

Encouraging Items

IN the last issue the question of pledges and fees was touched upon, and the decision based upon personal experience was given in favor of fees. It gives me great pleasure to find that the matter at issue is likely to stir up an amicable difference of opinion, and I gladly open the columns of this department to a discussion of the matter, Mr. Witmer Stone leading on behalf of the Pennsylvania Society in defence of the fee system.

Who will follow with an equally decided and tersely expressed plea for the other side? Such discussions are of infinite value to Audubonites as antidotes to a possible stagnation of ideas and methods.

APROPOS of the interchange of ideas, it was suggested several months ago, in these columns, that an Audubon conference would be helpful. It is now proposed to hold

such a meeting in Boston, immediately before the convention of the American Ornithologists' Union, which will be held at Cambridge, Mass., in November.

All those to whom the matter has been broached are heartily in sympathy with the movement, and I should be glad to receive general expressions of opinion on this matter also, as a very general interest is necessary if the conference is to fulfil its purpose of bringing in personal touch the friends of bird protection to discuss the best methods of furthering its welfare.

It is, indeed, cheering to record the organization of two new societies in very important bird states. Every one cognizant of the trend of the spring migration, as well as the recent attempt at wholesale slaughter in the interest of the millinery trade, must realize the cause for rejoicing that the accession of Delaware brings.

Kentucky, also, with its memories of Audubon and James Lane Allen's Cardinal, has fittingly joined the ranks, beginning its work by sending out printed warnings and freely posting the Bird Laws and the penalty for breaking them.

This is the season for garden classes and walking bird clubs of young people. If it is impossible to obtain the services of a professional bird student as a guide, an amateur, who knows but a score or two of birds, *if he is sure of his knowledge*, may give a great deal of pleasure to his friends, whose lists of positive acquaintances in the bird world can be counted on the ten fingers.

THE Pennsylvania Society has had the good fortune to receive a bequest of \$1,000 from Miss Gregg. We wish to remind our friends anywhere that it is not necessary that they should die in order to remember the Audubon Societies, and that we shall be doubly pleased to receive gifts of \$1,000 or under during the lifetime of the donors.

M. O. W.

The Question of Fees

All Audubon Society directors, I am sure, read with much interest the article in April BIRD-LORE relative to fees and pledges, and the argument in favor of fees as a means of paying expenses of the societies "without begging."

So far as I am aware the Pennsylvania Society is the only one that does not have regular fees, though many admit teachers and scholars free. As I was personally responsible for the free membership plan adopted by our society, I trust you will allow me a few words in explanation of our course and its results.

At the time the Pennsylvania Audubon Society was organized there was but one other such society in existence, and it was much harder to obtain members than it is today, when the principles of bird protection are better known. The success of the movement rested mainly upon the acquisition of a large membership, and it was felt that fees would defeat this object. It was further considered that those who

could afford to pay fees would contribute voluntarily, and experiment proved the correctness of this view. The only "begging" that the society has done has been to state in its general circulars that its expenses were met by voluntary subscriptions, just as other societies print their lists of fees. One plan, no doubt, works better in one community and another in another, but the agreement is certainly not all on the side of a *fee* system.

The Pennsylvania Audubon Society has now some 5,000 members, and its annual reports speak for themselves as to its success.

The graded membership whereby some members get certificates and circulars, and others (school children) get only buttons, has one disadvantage, which I do not think has been noticed in the BIRD-LORE articles, viz. ; what becomes of school children members after they cease to be school children? The Pennsylvania Society has now a number of young ladies in its membership who joined as school children. Would they not have been lost to the society, in many cases, if they did not receive at least a yearly communication from headquarters? In the Pennsylvania Society *every member*, from school children to patrons, gets the society's report, with a ticket to the annual meeting, and there is probably nothing that will keep alive the interest of a widely scattered membership so well as this feeling of personal contact with the central office that is fostered by these yearly communications.

Sincerely yours,

WITMER STONE,
Pres. Pennsylvania Audubon Society.

Reports of Societies

DELAWARE SOCIETY

The Delaware Audubon Society was organized on Saturday, April 7, at the residence of Mrs. William S. Hilles, Delamore place, by the election of the following officers: President, Arthur R. Spaid; Secretary, Mrs. William S. Hilles; Treasurer, Mrs. Job H. Jackson. The Board of Directors will consist of 12 members, four from

each county, and those selected for New Castle and Kent are: For New Castle, Walter D. Bush, Edward Bringham, Jr., Elwood Garrett of this city, and Miss Hetty Smith, of New Castle; for Kent, Mrs. J. B. Turner, Mrs. R. L. Holliday, John H. Bateman and Mrs. Fulton.

A constitution was adopted, following the lines of that of the Pennsylvania Society, the objects of the organization being the protection of birds and the discouraging of their use in wearing apparel and for the purposes of ornament.

About thirty persons attended the meeting, and others may join the society.

FLORIDA SOCIETY

MAITLAND, FLA., *March 2, 1900.*

An informal meeting of persons interested in the forming of a Florida Audubon Society was held at the residence of Mr. L. F. Dommerich, at 2:30 P. M. There were present Mr. and Mrs. Dommerich, Mr. and Mrs. Kingsmill Marrs, Mr. W. C. Comstock, Mrs. S. N. Bronson, Mrs. C. H. Hall, Mrs. J. Vanderpool, Mr. and Mrs. T. P. Baumgarten, Mrs. Harry Beeman, Mr. and Mrs. G. M. Ward, Mrs. W. S. Harney and Mr. W. Wilson-Barker.

At the suggestion of Mr. L. F. Dommerich, Rev. Geo. M. Ward was made temporary chairman, and on further motion Mrs. L. F. Dommerich was asked to serve as secretary. Mrs. Dommerich was called upon to state the object of the meeting. A brief abstract of the case as presented is as follows: Attention was called to the destruction of song and plumage birds in this state, and to the work that had been done in other states in the work of protecting our feathered friends. Letters were read from parties interested in the formation of such a society in this state, and the most encouraging statements were offered regarding the promised support, both financial and moral, which would be forthcoming should such a society be formed. Mrs. Dommerich further stated that liberal subscriptions had already been received towards the expenses of such a society.

It was decided that it was the unanimous

sense of this meeting that a society be formed in our own state. On motion of Mr. Dommerich, a committee of five was appointed by the chair to present a constitution and by-laws, together with a list of officers, for a Florida Audubon Society. The committee appointed consisted of Messrs. Dommerich, Baumgarten and Wilson-Barker, and Mrs. Marrs and Mrs. Bronson. After consultation, the above committee made its report, offering for the adoption of our society the by-laws of the New York State Society, suggesting such changes in the wording as were necessary to make said by-laws applicable to this state. On the list of officers the committee reported as follows: President, Rt. Rev. H. B. Whipple, D.D., LL.D., Bishop of Minnesota, Maitland. Honorary vice-presidents, Governor Wm. D. Bloxham, Tallahassee; Mr. Andrew E. Douglass, St. Augustine; Mr. Kirk Munroe, Coconut Grove. Chairman Executive Committee, Rev. Geo. M. Ward, Winter Park. Secretary and Treasurer, Mrs. L. F. Dommerich.

On motion of Mrs. Dommerich, it was voted to send a copy of the report of this meeting to the vice-presidents and members of the Executive Committee who were not present on March 2, and to the various editors in the state. On motion of Mr. Baumgarten, it was voted to name as date for the annual meeting the first Tuesday in March. The report of the committee on constitution and by-laws, the list of officers and the date of the annual meeting were adopted.

On further motion, a committee of five were appointed by the chair to draft a bill to be presented to the next Legislature. The chairman appointed Rt. Rev. H. B. Whipple, D.D., LL.D., Messrs. Baumgarten and Marrs, Mrs. Dommerich and Mrs. Comstock.

On motion, it was voted to purchase a suitable number of the pamphlets issued by the New York Society, describing the work of said Society, to be mailed with the copy of our constitution to parties desired as members.

On further motion, it was voted that a

letter be sent to the vice-presidents and members of the Executive Committee, embodying the wishes of the Society to the following effect: namely, that they should seek to increase the membership of the Florida Society, and arouse as much interest as possible in the work of protecting our feathered friends, and to interest persons in their own town to form a local society, and to interest all children in the neighborhood, and to urge that the city or town where they reside pass necessary ordinances to protect the birds, and further that all such officers report progress to the meetings of the state society.

On motion of Mr Baumgarten, the meeting adjourned to the call of the Executive Committee.

MAITLAND, FLA., *March 30, 1900.*

MR. FRANK M CHAPMAN.

My Dear Sir—I have been asked to send you a brief account of the organization of the Audubon Society of Florida.

We owe a debt of gratitude to Mrs. L. F. Dommerich for the interest which she has awakened for the protection of the birds of Florida. No state or territory in our country has been as richly endowed in plumage and song birds as this state. It has been the meeting place of tropical and northern birds.

At my first visit to Florida, fifty years ago, I saw at almost every turn on the St. John's river, the Pink and White Curlews, and scores of other brilliantly plumaged birds. Within the past twenty years I saw, on one occasion, in the woods bordering on Lake Jessup, not less than two thousand Paroquets.

Many of these beautiful creatures are no longer to be found, unless in the Everglades. The murderous work of extermination has been carried on by vandals, incited by the cupidity of traders who minister to the pride of thoughtless people.

Our best work will be through the teachers of the public schools, for they can reach the hearts of the children, who wantonly destroy both birds and eggs.

We have been delighted at the enthusi-

asm and interest exhibited by the people of Florida in this blessed work.

Our Saviour taught us that these feathered friends and companions of men are a special object of our Heavenly Father's care. And should he not have his children's help in their protection? With high regards,

Yours faithfully,
H. B. WHIPPLE,
Bishop of Minnesota.

MINNESOTA SOCIETY

Our work goes on with many bright and cheery incidents, which show a gradual gain for the good work of bird protection. Many new branches have been established throughout the state, and many letters received from persons interested in the work shows that the circulars sent out are doing good. BIRD-LORE should be credited with much of it. Last spring we had Olive Thorne Miller with us, and her lecture course was well attended, giving us valuable assistance. While there are some discouraging days caused by the want of interest shown by some good women, who still wear upon their hats the bodies of our beautiful birds, we notice that the custom is decreasing, and Bird-Day law is introducing into our schools the study of ornithology.

JOHN W. TAYLOR, *Pres.*

KENTUCKY SOCIETY

It is with great pleasure that I write of the formation of the Audubon Society of Kentucky. We have taken hold of the work at once, directing our efforts first toward giving our birds protection under the law as it exists in our statute, and toward the encouragement of a healthy sentiment in the schools for bird life.

We have bought a large chart for use in the schools, and we propose two public meetings a year in addition to our educational and social meetings from time to time. Interest is manifested already.

We think we have made a happy choice in our president and vice-president, estimable ladies, discreet and tactful, and withal touched with the value of our work.

INGRAM CROCKETT, *Sec.*

A Letter from Governor Roosevelt

The following letter from Governor Roosevelt was read at the annual meeting of the New York State Audubon Society, held June 2, 1900, at the American Museum of Natural History:

Mr. FRANK M. CHAPMAN,
Chairman Executive Committee.

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.

AN AGREEMENT*

Entered into between the members of The Millinery Merchants' Protective Association and others, regarding the importation, manufacture and sale of North American birds. Made Saturday, April 21, 1900.

The undersigned importers, manufacturers and dealers in raw and made fancy feathers do hereby pledge themselves not to kill or buy any more North American birds from hunters or such people who make it a business to destroy North American birds. However, we shall continue to manufacture, sell and dispose of all such North American birds and their plumage, as we now have in our stocks and ware-

*See Editorial, page 93.

houses, and shall so continue until Congress shall make such laws which shall protect all North American birds, and which laws shall be approved by the Audubon Society and the Ornithological Union, and also do justice to the trade. This does not refer to plumage or skins of barnyard fowl, edible birds or game birds killed in their season, nor to the birds or plumage of foreign countries *not* of the species of North American birds. Furthermore, it shall be our solemn duty not to assist any dealer or person to dispose of any of their North American birds, if same have been killed after this date.

Any member of this organization violating this pledge, upon conviction shall be fined the sum of \$500 for each offense. However, as there are several dealers who are not members of this organization and over whom we may not have any influence; therefore, should we find that these dealers are selling, killing or buying North American birds, we shall do all in our power to have them brought under the penalties of the various laws already existing.

In return for this pledge, we expect the Audubon Society and the Ornithological Union to pledge themselves to do all in their power to prevent laws being enacted in Congress, or in any of the States, which shall interfere with the manufacturing or selling of plumage or skins from barnyard fowl, edible birds and game birds killed in their season, and all birds which are not North American birds.

Resolved, That the Secretary be instructed to transmit a copy of this agreement to Messrs Frank M. Chapman, of the Museum of Natural History; William Dutcher, of the New York Ornithological Union, and Witmer Stone, Chairman of the Executive Committee of the Ornithological Union, advising them of the action of the Association and asking their cooperation in carrying out the same.

Signed: Thomas H. Wood & Co., L. Henry & Co., Alfred L. Simon & Co., George Silva & Co., Wurzbarger & Hecht, A. M. Levy, Max Herman & Co., Jos Rosenthal & Son, Blumenthal & Stiner, Lowenfels & Heilbronner, Philip Adelson & Bro., H. Hofheimer & Co., David Spero, George Legg, Zucker & Josephy, and many others.



NESTS OF CLIFF SWALLOWS

Photographed from nature by S. W. Williston, in Rush Co., Kan.

Bird = Lore

A BI-MONTHLY MAGAZINE
DEVOTED TO THE STUDY AND PROTECTION OF BIRDS
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. II

AUGUST, 1900

No. 4

The Orientation of Birds*

BY CAPTAIN GABRIEL REYNAUD, French Army

Translated from the French by Mrs. Clara J. Coxe



THE question of the orientation of animals has given rise to many controversies, and the ideas expressed on this subject may be summed up in two theories. Some, with Spaulding, Russell, Wallace, and Croom Robertson, think that the faculty of orientation should be attributed to a particular acuteness of the five senses inherent in animals, they having ideas which only reach us through the medium of instruments of precision. Others consider that orientation brings into play a sixth sense, independent of the first five. Flaurens, Romanes, Henry Lordes, Goltz, Pflüger, Mach, Crum Brown, and Brand admit that this sense exists and has its seat in the semi-circular tubes of the ear.

These two opposed theories are each supported by unquestionable facts, apparently giving reason for the two schools. Now, there cannot be contradiction regarding facts.

If one unique law governs all the acts of orientation, these acts must all occur in the same way. If, when placed in different conditions, the animal has recourse to different methods of orientation, it indicates that the law which it obeys is no law.

We have bent all our attention to the observation of the facts. We have verified that our predecessors are not in harmony with each other, because the observations which had served them as a point of

*At the time this paper was written for BIRD-LORE, Captain Reynaud was in charge of the Homing Pigeon Service of the French Army. He subsequently was called on to establish a 'Pigeon Post' for the Compagnie Generale Transatlantique, and in the interests of this company has twice visited this country. His initial experiments in this connection are mentioned in this article. Later, we hope to receive from him a detailed account of his important attempts to increase the usefulness of the Homing Pigeon through careful training and selection.—ED.

departure were incomplete. Before entering upon the theory it might be as well to inquire a little into the practical working of orientation. The act of orientation is extremely difficult to observe. When an animal goes astray we know generally where he has been lost; but we do not know, very often, by what way he has reached that particular place. If we let loose a flock of Carrier Doves we soon lose sight of them, and we only find them again in the Dove cote.

Between the point of departure and the point of arrival there is a lacune for the observer. It is this gap we think we have succeeded in filling.

Basing ourselves on laws purely hypothetical at the beginning, we have succeeded in reconstituting the complete itinerary of animals closely observed, to follow them, in a way, step by step. We have equally studied the fault of instinct, the error of orientation, and we have verified that the puzzled animal obeys the rules, confirming the laws which we are going to formulate.

We had at our disposal a grand field for observation. M. le Ministre de la Guerre gave us the task of constructing a movable Pigeon cote, which represents the practical illustration of our theory. Finally, La Compagnie Transatlantique requested us to organize a Carrier Pigeon post to be utilized for the service of their steamships. To the numerous experiences on land and sea we have added very interesting observations, of which the results have been communicated to us by credible witnesses.

To sum up, we bring a great number of facts, many of which, controlled by the official reports of the commissioners representing the Minister of War, have the character of veritable discoveries.

We have grouped the acts of orientation in two categories: *near orientation*, attributed to the exercise of the five senses, showing observation at work and, in a certain sense, reasoning and intelligence; and *distant orientation*, an act purely mechanical, accomplished by means of a subjective sense to which we give the name of the Sense of Direction.

In each of these two cases the mechanism of orientation obeys distinct laws.

In the study of mathematics we often employ a method which consists in considering as proved a proposition presented as a problem and in drawing a deduction from it.

We will do the same. Let us admit as a hypothetical law that *the instinct of orientation is a faculty that all animals possess in a greater or less degree, of resuming the reverse scent of a road once crossed by them*, and then let us use it to explain *certain facts not explicable in any other way*.

Let us attend in thought a *release* of pigeons. Many hundreds of birds coming from the Pigeon cotes of the same region are set at liberty at the same time. They set out together, divide for traveling in two or three groups, then, as soon as they reach the known horizon, scatter themselves, and each of them flies directly to his own home.

A certain number of carriers do not answer to the call, others come home the following days. The "pigeon-flyer" limits himself to registering the loss of some and verifying the tardy home-comers, without trying to penetrate the reason of the fault of instinct. How



PIGEON CARS OF THE FRENCH ARMY

could we ask of the bird his secret that a sudden rapid flight conceals from us? Instinct is at fault, the bird must wander at random, counting on chance alone to find his way back again.

We cannot share such an opinion for the following reasons: The bird astray through fault of instinct is not for that reason in revolt against the general law of preservation which regulates all his actions. On the contrary, he feels very keenly the call of instinct which incites him to search for his own Pigeon cote.

He sees very clearly the end in view, but the means of reaching it are momentarily at fault. He then displays all the activity of which he is capable, and tries many aërial tracks, one after another.

The 'law of reverse scent' will permit us to follow him on his wayward course, and to re-establish his itinerary. When we surprise the lost Pigeon's secret, we will verify that *chance* does not play any part in the movements of the bird.

In 1896 we attended a '*lacher*' of Pigeons that came from the Pigeon cotes of Mons and Charleroi.

The two flocks of Pigeons having been set at liberty by chance at the same time, from two different points of the freight station, reunited in the air and formed at the time of their departure one flock. The weather was extremely unfavorable, mist, rain and a contrary wind contributing to retard the home-coming of our winged travelers. A first fault of instinct, easy to explain, was noticed on their arrival; two Pigeons from Mons are captured at Charleroi, and three Pigeons from Charleroi are taken at Mons. In short, about forty Pigeons did not return to their homes the same evening they were set at liberty.

The departure from Orleans had taken place with a perfect gathering of the whole number of Pigeons; the birds taking their direction first showed the way to follow to their companions, and some of these followed their guides blindly, to the extent of entering with them their unfamiliar Pigeon cotes.

However, at Orleans, an observer verified, between three o'clock in the afternoon and seven o'clock in the morning, the arrival of about thirty Pigeons, which perched themselves on the roof of the station. Night came and we succeeded in capturing nine: five from Charleroi, and four from Mons. We set them at liberty again. This verification permits us to suppose that the thirty-two Pigeons which came back to Orleans had all lost their way when they were released in the morning. The morning of the next day, from five to seven o'clock, they all disappeared, one after the other, in the direction of the North. About thirty of the belated ones returned the same day to Charleroi and Mons.

These comings and goings explain themselves quite naturally by the 'law of the reverse scent.' Our winged voyagers forming one flock at their departure from Orleans, were not long about dividing themselves into many groups. We have pointed out that to come back they had to struggle against the bad weather. Now, in this regard, the Carrier Pigeons are not all armed with the same ability to fight the elements. The small Pigeon, called the '*Liegeoise*,' flies with great velocity during normal weather.

The very stuffy-looking Pigeons called '*Auversoise*,' endowed with considerable muscular power, cannot rival the *Liegeoise* during fine weather, but is very superior to him when it is necessary, for

example, to struggle against a violent wind. It is, then, very natural that, endowed with different degrees of ability, our Pigeons leaving together in perfect unison, should have, little by little, become separated from each other on the route.

A Pigeon from Mons, finding himself in the midst of a band of companions flying toward Charleroi, followed them as far as their destination. Then seeing each one of them disperse, in order to regain his own home, he remained alone, lost on the roofs of an unknown city. Now, Mons is not far from Charleroi, and it would be sufficient for our traveler to raise himself in the air to see, perhaps, his natal roof. He does not do so: having in the course of his preceding journeys contracted the habit of using only the sixth sense for distant orientation, he does not dream for an instant of utilizing his sight. Resuming in an inverse sense the road followed to come to Charleroi, he arrives at Orleans at the point where he had been liberated that very morning. Tired with the long trip accomplished during the day, he rests there one night. The next day he takes his bearings and finds again the 'reverse scent' of the road practiced two days before in the railway train, and reaches Mons. The thirty-two Pigeons which reappeared at Orleans the evening of the release, only to disappear the next day, very likely followed the same rule of conduct.

The example we have just cited is assuredly interesting. We have based our statements on real occurrences, then when facts failed on simple conjecture, to explain the comings and goings of the Pigeons. We have consequently in our deductions, if not certainty, at least a great probability, which, however, does not quite satisfy us. We think, therefore, we ought to present a few cases more conclusive than the first.

A Pigeon belonging to a colombophile of Grand-Couronne alighted in the garden belonging to M. le Général M——, at Evreux. We were to go that same day to Rouen. We carry away the lost Pigeon and set him at liberty in the station of Grand-Couronne near his Pigeon cote. The Pigeon takes his bearings and returns to Evreux, at M. le Général M——. Caught again, he is this time expressed in a postal package to his owner. Allowed to go free in the cote, he no longer thinks of returning to Evreux.

The Pigeon stopping to eat and rest at M. le Général M——'s did not consider for one instant that unknown house as a new home: it represented to him a point of journey followed before and, consequently, must be a point of departure for future investigation. After a few hours of rest he will set out again from there to resume the 'reverse scent' of the aériel path that led him to Evreux. He only thinks of finding again his lost home.

We take him in a railway car to Grand-Couronne, and we free him at a few steps from his cote. But the sense of distant orientation, the sixth sense, is alone in working order, to the exclusion of the first five. The bird takes up again his reverse scent, passes in sight of his dwelling as if hypnotized, *without seeing it*, and reaches Evreux once more at the point through which passed that itinerary which he is trying to re-establish.

His calculation is baffled; brought back to his owner's home and given his freedom, he, this time, is brought to himself. The five senses, awakened by stronger sensations, resume the upper hand and the sixth sense, becoming useless, ceases to work.

There is at Orleans an enclosed Pigeon cote having no external issue for the little prisoners. The Pigeons that are shut up in it, and that come from the military Pigeon cotes at Paris and from the North, live there in semi-obscurity and in absolute ignorance of what passes outside. When, after a month or two of captivity, they are to be set at liberty, every precaution is taken to carry them away for the release many kilometers from their transient cote, to which, besides, they are not attached by any agreeable remembrance. Now, we have stated elsewhere that very often Pigeons know how to find that house without even knowing its outside appearance. They perch themselves on the roof, then, after a short stop, they take their bearings and disappear in order to go back to the cote where they were born.

The *law of reverse scent* allows us to explain the conduct of the Pigeon. He is carried away, set at liberty, let us say, at the station of Aubraës, takes up the *reverse scent* and hovers about the *cote of exclusion*, which represents to him the end of the itinerary by which he has been brought to Orleans. It is then from there that he will set out to take up in an inverse sense the road, the remembrance of which has remained deeply engraved on his memory.

We could multiply examples of the same kind to show that the Pigeon astray always comes back to the point of his release. We may be convinced of this truth by glancing at the roofs of railway stations of Paris, Orleans, Blois, Tours, Poitiers, Bordeaux, etc., where, every Sunday during the fine weather, people set at liberty hundreds, and sometimes thousands, of Pigeons! On Monday we would notice the return of numerous Pigeons lost the day before, that, not having succeeded in their first trial in finding their natal roof, are going to make a second attempt, and sometimes a third, in order to find the right road.

When set at liberty the day before the Pigeon took his flight, he fled swiftly from that point of departure to which, apparently,

no interest attached him. With one powerful sweep of his wings he has crossed four or five hundred kilometers, perhaps more, in the wrong direction. Perceiving his error, he knows how, thanks to a mysterious instinct, to take up again his reverse scent and find the point of departure, of which he has hardly caught a glimpse in the morning. The combined action of the five senses cannot explain such a return. The lost dog acts absolutely in the same manner. When taken away in the railway train to a hunting ground entirely unknown to him, if he happens to go astray, he comes back to the point where he saw his master for the last time, and stations himself there until someone comes to find him, or else, resuming his reverse scent, he reconstitutes in an inverse sense his itinerary through which he has been brought, and finds again his home.

The migrations of birds have been the object of observation too well known for us to dilate upon, and we will limit ourselves to explaining, with the aid of our theory, some evident truths.

The migratory bird is subject, like his species, which invariably inhabits the same region, to the law of cantonment. Only, he has two domains, one summer residence, the other for winter. We know that the same Swallows come every year to occupy the same nest and to live in the same canton. The same fact is true regarding Storks and many other birds.

When the time for departure has sounded, birds of the same kind living in the same region assemble together for the journey. Those which have already made the passage take the head of the flock and follow in an inverse sense the itinerary which brought them to their present quarters. The younger birds, born since the preceding trip, limit themselves to following their elders. And when, a few months later, it will be a question of returning, they will be in their turn capable of finding their way unaided.

The migratory bird born in our climate not having yet made any journey, that for any reason whatever fails to leave with the other birds, renounces emigrating. It is this way wounded Woodcock, not in a condition to undertake a long journey, resign themselves to living in our country until the following spring. The same thing has been remarked concerning Peewits, Curlews, Storks, or Swallows held in captivity at the time of the departure of their comrades. Some of these birds endure the rigors of the climate; others, notably the Swallows, succumb to it.

Thus, then, it is a sort of tradition that migratory birds transmit to each other from generation to generation the indication of their aerial passage. These passages once traced are immutable.

The itinerary of the Quail, which arrive from Africa in Provence,

or of the Woodcock, which find their landing place in Jersey, is well known to the peasants, who capture them by the thousand.

It would be sufficient for the poor birds to baffle their enemies only to change the route of their direction a few kilometers. But they cannot do so: they are fatally bound to the aerial way followed in the preceding journey and cannot leave it without losing themselves.

It is just so with other animals. Fish are cantoned. Certain of them have, like the migratory birds, two or three domains that they occupy successively. To go from one to another they emigrate in a mass, and follow routes of which the traces are subject to the rules we have set forth for the migration of birds. The relentless war that fishermen with a knowledge of their habits make upon them has never caused them to change their itinerary.

Our theory of orientation seems, therefore, applicable to animals of all kinds. It permits us to arrange and explain in a very satisfactory manner a number of facts observed and known for a long time.

(To be concluded.)



CATBIRD ON NEST

Photographed from nature by A. J. Pennock, at Lansdowne, Pa., July, 1899

A Study of a Lincoln's Sparrow

BY WILLIAM BREWSTER



AT Concord, Massachusetts, in the spring of 1899, I had a rare opportunity of studying the habits and notes of a Lincoln's Sparrow. The bird appeared May 15th in a thicket of bushes within a few yards of the log cabin where I was living, and remained there until the 22nd, spending apparently the whole of this period within a space a few yards square. On the edge of the thicket, in a bed of ferns about fifteen feet from the cabin door, I scattered daily a quantity of millet seed. This convenient supply of a food irresistible to most of the Sparrow tribe had, no doubt, much to do with the prolonged visit of the Lincoln's Finch, although the weather, during his entire stay, was too cool and threatening to be favorable for migration.

He was shy at first and at all times alert and suspicious, but he showed a nice and, on the whole, wise discrimination in his judgment of different sights and sounds. He soon learned to disregard noises made within the cabin, as well as the rumble and roar of trains passing along the railroad across the river; but if our door was suddenly thrown open or if a footstep was heard approaching along the path he at once deserted the millet and retreated into the thicket, dodging from bush to bush and keeping behind anything that would serve as a screen until all became quiet again, when he would reappear at the fern bed and, after a short reconnoissance, resume his interrupted meal. However busily engaged he might be, no sight nor sound escaped him. If a Chipmunk rustled the dry leaves on the neighboring hillside he would erect his body and crane up his neck, turning his head slowly from side to side to watch and listen. There were many Chimney Swifts flying about, and when one passed low overhead, with a sound of rushing wings, the Sparrow would cower close to the ground like a frightened Partridge or Woodcock and remain motionless for a minute or more. But if nothing occurred to excite his apprehensions he would continue to feed busily and unconcernedly until his appetite was satisfied. Truly an alert, keen-witted little traveler, quite alive to all the possible as well as obvious dangers that surrounded him, but too experienced and cool-headed to give way to those senseless panics which so often seize upon many of our smaller birds.

Some of the seed had sifted down under the leaves, and for this our bird scratched diligently like a Fox Sparrow, making first a forward hop of about two inches, then a vigorous backward jump

and kick which scattered behind him all the leaves on which his feet had for an instant rested. In this way he would quickly clear a considerable space, to which he would then devote his attention until he had picked up all the uncovered seeds and rolled them, one by one, between his slightly opened mandibles to remove the husks, after the manner of most seed-eating birds. He was invariably silent when feeding, but within the recesses of his favorite thicket he sang more or less freely at all hours, oftenest in the early morning or when the sun had just emerged from behind a cloud, usually from some perch a yard or less above the ground,



LINCOLN'S SPARROW

About $\frac{1}{2}$ natural size. From a mounted specimen in the American Museum of Natural History

but not infrequently on the ground itself as he rambled from place to place, hopping slowly over the dry leaves. His voice was divinely rich and sweet at times, but invariably so low as to be inaudible at a greater distance than forty or fifty yards. It is impossible to treat briefly and at the same time accurately of his song, for it included several themes, some of which differed comparatively slightly from one another, while others were widely dissimilar. After spending much time studying and comparing them, I noted and classified them as follows:

1. A simple, level, woody trill repeated at short, regular intervals, usually indistinguishable from the summer song of the Junco but sometimes possessing a resonant, lyrical quality approaching that of the Yellow-rumped Warbler's song.

2. Trills similar to those just described but connected by unbroken series of short, soft, liquid notes, among which the *tsup* call common to both the Junco and Lincoln's Sparrow were frequently interpolated, the whole forming a protracted and very musical medley almost exactly like that given by the Junco in early spring. This song should perhaps be regarded as a mere variation of No. 1, but as the bird never changed from one to the other I have kept them apart.

3. A rapid warble, at times flowing smoothly and evenly and exceedingly like the song of the Purple Finch, at others brighter and more glancing, the notes rolling over one another, as it were, and suggesting those of the Ruby-crowned Kinglet: again with a rich throaty quality and in form, as well as tone closely like the song of the House Wren; still again guttural and somewhat broken or stuttering, like that of the Long-billed Marsh Wren. Although the first and last of these songs were very unlike, I have put them all under one head, because the bird often used them all during a single singing period and frequently changed from one to another by insensible gradations.

4. Song in slow, measured bars separated by brief intervals, the cadences alternately swelling and dying softly, some of the notes trilled or shaken, the whole resembling in general form as well as in manner of delivery the songs of Bachman's Finch and the Hermit Thrush, and possessing not a little of the same spiritual quality.

Some of these songs were fixed and uniform at all times; others varied within the limits I have just indicated; all resembled and two or three exactly reproduced the songs of other species of birds. Indeed, not one can safely be regarded as original either in form or tone. Those classified under different numbers were never interchanged save after protracted periods of silence, the particular theme selected on each occasion being repeated with little or no variation until the bird ceased singing, while it was sometimes made to serve for a whole forenoon. I can think of no other bird which sings in this way, borrowing his songs from half a dozen other species, never intermingling them nor combining them with notes of his own, but selecting one for one hour or occasion, another for another.

With such a repertoire, even though it be borrowed or stolen, Lincoln's Sparrow might easily rank as the first among North American singing birds were it not that his voice has so little power that its remarkable beauty and flexibility cannot be appreciated unless one is very near the singer. It is quite possible, too, that

the particular bird about which I have been writing was an exceptionally gifted performer, although at least two of the songs which I have attempted to describe have been heard by other observers.



FLICKER AT NEST-HOLE

The same site had been used for two previous seasons, in one of which the opening was artificially enlarged by "some boy"

Photographed from nature by A. L. Princehorn, at Glen Island, N. Y., June 16, 1899

The Birds that Pass in the Night

BY HARRY S. WARREN



UPON the request of Mr. H. A. Winkenwerder, of the University of Wisconsin, I made arrangements to take observations with the telescope at Detroit upon nocturnal bird migration, using the moon for a field of vision, during the full moon in May. The moon would be at full at eight A. M. on the 14th, Monday, but, anticipating cloudy weather, we made our observations on Sunday evening, the 13th, which was clear and warm, with a very light southwest wind. As it was rather late in the migrating season, we expected poor results, but a glance at the tabulated figures below will show that we were pleasantly disappointed.

There were four principal facts we wished to establish by these observations: the number of birds, the direction of flight, their speed, and relative size. In order to obtain this data we numbered the four cardinal points on the field of vision, and for every bird that passed we wrote down, on blanks prepared for the purpose, the point or fraction of a point at which he entered and that at which he left the field, the relative speed at which he passed, and the comparative size of the bird, as well as any further data observed for each individual. The observations covered the time from 8.15 P. M., which was the time the moon came clearly into vision, to 12 midnight, and this time we divided into fifteen-minute periods so as to ascertain the number of birds passing at any period of the evening, as shown below. To make the work easier we changed watches every fifteen minutes, one person using the telescope and the other writing down the data.

The telescope used was a 6-inch refracting instrument, equatorially mounted, with an 8-foot focus; and the eye-piece, a forty-power Clark lens. The number of birds passing during each period, their directions of flight, their speed and comparative size are shown in the following tables:

DETROIT, MICHIGAN, May 13, 1900.

Temperature: } Max., 70° at 8 P. M.
 } Min., 66° at 12 Midnight.

Atmosphere, fair; wind, light, southwest.

Number of birds seen from	8.15 to	8.30	8	
" " " " "	8.30 to	8.45	7	
" " " " "	8.45 to	9.00	10	
" " " " "	9.00 to	9.15	8	First hour 33

Number of birds seen from 9.15 to 9.30	9	
" " " " " 9.30 to 9.45	10	
" " " " " 9.45 to 10.00	14	
" " " " " 10.00 to 10.15	8	Second hour 41
" " " " " 10.15 to 10.30	10	
" " " " " 10.30 to 10.45	6	
" " " " " 10.45 to 11.00	4	
" " " " " 11.00 to 11.15	7	Third hour 27
" " " " " 11.15 to 11.30	4	
" " " " " 11.30 to 11.45	1	
" " " " " 11.45 to 12.00	5	Fourth period 10
Total number seen from 8.15 to 12.00		111

DIRECTIONS OF FLIGHT

Number of birds traveling northeast	74
" " " " north-northeast	13
" " " " east-northeast	11
" " " " north-northwest	5
" " " " north	4
" " " " northwest	3
" " " " southeast	1

SPEED

Number of birds traveling very rapidly	75
" " " " moderately	22
" " " " slowly	12
" " " " very slowly	2

RELATIVE SIZES OF BIRDS

Small (Goldfinch)	66
Medium (Robin)	27
Large (Crow)	15
Very large	3

COURSES OF FLIGHT

One hundred and eight birds kept their direct courses while passing over the field of vision.

One bird came in moving southeast and curved back to northeast, changing its course about 45° .

Two birds flew in a curve; one changing its course from northeast to east, and one from northeast to north.

IDENTIFICATIONS, ETC.

No. 12 (original list) had the flight of a Hawk or Owl. No. 28 had the wings spread like a Hawk soaring. No. 31 wing motions were plainly seen, but no identification could be made on account of uncertain distance. No. 34 had wavy motion of flight like a Goldfinch. No. 46 passed slowly, the wings beat rapidly and the neck was seen stretched

out like a Duck, Loon, or Grebe. The slow passage was evidently caused by distance. No. 61 had flight like a Goldfinch. No. 72, wing-motions were plainly seen. No. 94 passed very slowly; this was evidently a large bird at long range, as it occupied three seconds in passing over the field and the wing-motions were plainly seen.

We probably missed about one-tenth of the birds passing over the field while changing watches and changing eyes at the telescope, for it is impossible for the eye to focus steadily upon the bright surface of the moon for more than about five minutes, without exhausting the receptive power of the retina, so that a change of eyes is imperative. Being novices at the work, we probably missed more birds at first than after we had had the experience of a couple of watches; still it will be noticed that more birds were recorded for the first two hours than later in the night, which is proof that more birds were moving early in the evening. The number dropped off perceptibly at about 10.30.

The Cartwright observatory, where these observations were made, is located back about three-fifths of a mile from the Detroit river, which at this point is about a mile in width, and the telescope was pointed out over the river at an angle of about 30° . The fact that we were looking out directly over the river undoubtedly explains the general easterly flight of the birds noted. We would naturally expect a more direct northerly course of these spring migrants, but the birds were evidently following up the broad moon-lit course of the Detroit, which here runs from east-northeast to west-southwest, and we estimated that these birds were somewhat more than half a mile above the river.

There are so many unknown quantities in making estimates from these observations, that it is impossible to arrive at any positive conclusions except as to the number of birds passing over the field of vision and their direction of flight. For instance, a bird that we noted as appearing to be in rapid flight might either be actually in rapid flight at long range or might be in comparatively slow flight at short range. In either instance he would pass the field of vision quickly. Here the unknown quantity is distance, which, given, we could readily estimate actual speed. Then a bird flying at right angles to the direction of sight would appear to be moving faster than one moving obliquely toward or from the point of observation. A bird appearing large might be either a large bird at long range or a small bird at short range. Again, if a bird flying east should move upward or downward but a few feet while crossing the field of vision it would register the same result in the telescope as though he were moving northerly or southerly,—that is, of course, when the moon is low in its orbit, as it is in the spring elliptic. There

are, however, rare instances where the conditions are such that identification of a bird as to its order, or even more detailed identifications, are possible, and it is this *chance* which buoys up the enthusiasm while keeping your patient vigil.

When the small cone of atmosphere between the eye and the moon is compared with the entire dome over any point of observation, the mind may grasp the extent of this movement of the birds that pass in a night in any longitude, and when this is again multiplied by the number of nights in the migrating season, and again by the width of our land from the cliffs of Newfoundland to the Golden Gate of the Pacific, some conception may possibly be had as to the vast importance in the economy of nature of this movement of the feathered army as it sweeps northward on its summer campaign.



NIGHTHAWK AND YOUNG

Photographed from nature by Robert R. Peebles, at Stamford, Conn., June 3, 1900

For Young Observers

Two Notes by a Young Observer

EDMUND B. DIBBLE. St. Paul, Minn. (aged 13)

A Word about Bluejays.—One morning when out on the lawn I saw a Bluejay fly quietly into a tree, look around, then hop up near a Robin's nest. He looked around again, then hopped up to the rim and leaned over as if to take out an egg, but a Robin which happened to fly up to the nest just then saw him and, redoubling its speed, flew against the Bluejay's neck and (whether to try to hold itself up or pull the Bluejay down I do not know) held on. Both tumbled to the ground, and for a moment the Bluejay 'didn't know what struck him.' Then the other Robin came and began pecking at the Jay's eyes, whereupon Robin No. 1 let go and began pecking too. The Jay seemed to think things were getting too warm for him and started for the woods near by, where I could hear the cries of both him and the Robins who had followed him.

Last year a Bluejay robbed a Sparrow's nest just outside my window. I awoke one morning to hear a great outcry among the English Sparrows and, going to the window, saw a Jay just gulping down something. Then he leaned over and lifted a young bird up, but I tapped on the window and he dropped the bird and flew away. When I looked in the nest one bird was missing.

The Feeding of Young Horned Larks.—One afternoon (May 11), desiring to know how many times the Horned Larks brought food to their young, I posted myself where I could watch them. Although I was too far away to distinguish what they gave the young, I could see the little fellows open their yellow mouths to receive the food.

I started my watching at just four o'clock, and below are the times at which the birds brought the food for about one hour: 4.01, 4.01½, 4.06, 4.10, 4.11½, 4.14, 4.20, 4.24, 4.29½, 4.31, 4.37½, 4.39½, 4.41, 4.46, 4.50, 4.52, 4.55½, 4.58, 5.00, 5.02. It will be seen that this made twenty times in about one hour or, on an average, every three minutes.

At the first glance this may seem extraordinary, but as there were four young ones, each would be fed only once every twelve minutes. But think of the number of insects destroyed in a season. The parents work from twelve to sixteen hours a day, and raise three or four broods of four or five birds each in a season. Just think how soon the insects would become unbearable if it were not for our feathered friends! Man alone could do almost nothing against them.

Notes from Field and Study

Early Breeding of the Pine Siskin

Small flocks of Pine Siskins have been frequent visitors at my home for several weeks. On April 14, 1900, I observed them as before, and while enjoying their presence I heard an unusual sound which instantly reminded me of young birds. I took my glass to find, if possible, the cause of the outcry, when, only a few feet from where I was standing, I saw a parent Siskin feeding its young and near by sat another waiting to be fed. There may have been still more young in the evergreen trees close, by but I was only sure of two. They were quite small and looked like little round balls of feathers.

On the morning of April 17 Mr. Horton observed them in the same location while being fed by the parent bird.—Mrs. WM. C. HORTON, President of Brattleboro Bird Club, *Brattleboro, Vermont.*

An Oriole Tragedy

Some time ago two boys brought a nest to my office which they had found in their wanderings afield. It was the



AN ORIOLE TRAGEDY

finely woven pendent of the Baltimore Oriole, made entirely of twine, a material which proved fatal to the little architect, for there she was hanging pathetically by the neck from the lintel of her own doorway, her nestlings starved within. As far as I know this accident is unique in that it occurred after the period of incubation. Let us hope that the struggle was soon ended, that the unfortunate mother was not long compelled to listen in impotent distress to the appealing cries of her starving young until kind death at last brought relief.—J. HOLBROOK SHAW, M.D., *Plymouth, Mass.*

The Newport Robin

Many summer visitors to Newport, Rhode Island, are acquainted with the establishment of Mr. Charles E. Ash, of No. 3 Market Square. Mr. Ash and his son are devoted to pets. Mike, an old Barbary Ape, was the recipient of much attention from visitors, and doubtless promoted a better understanding of human character among the thoughtful ones. But the monkeys, dogs, cats and squirrels were not always the favorites. A common Crow that said "papa" and "hello" was in high favor with the children; and a wonderful Robin that whistled a march to the step of the police squad marching to and from the neighboring police station was certainly one of the best known and most popular individuals of the feathered tribe in America.

This Robin closed a long and happy career before my arrival in Newport. He lived on a busy thoroughfare, where a tiny fountain played into a marble trough in which horses slaked their thirst in front of a police station and the Robin's cage; but he never saw a grassy lawn or a green tree, having been taken from a nest built in a post on Bellevue avenue when a very wee bird, by Mr. Charles E. Ash, Jr., who told me that the male parent of this Robin was the finest singer of any he had ever heard.

Mr. Ash's pets have received considerable attention from naturalists, and biographies of some of them have frequently appeared in the local press; but none other has been so much talked of and written about as the Newport Robin—a thoroughbred patrician bird from Bellevue avenue. This male Robin was taken from the nest when scarcely feathered and placed in a cage which hung in the office of the market, and there he learned, from the musically inclined customers and from his master, such airs as 'Yankee Doodle,' 'Sweet By-and-By,' 'Marching Through Georgia,' 'Over The Garden Wall,' 'Johnnie, Get Your Gun,' 'Here She Goes—There She Goes,' and many others, one of his acquirements being the campaign air: 'What's the matter with Harrison; He's all Right,' and all rendered in perfect tune and with a sweetness surpassing the finest flute or piccolo.

At first Mr Ash thought of his little prisoner simply as a companion during the extreme early hours at which the market had to be opened, and was surprised one day at hearing him whistling one of his own favorite airs. But after that he took a little more pains and spent his leisure moments in teaching the Robin different tunes, and, finding him an apt scholar, encouraged customers to whistle in his presence until he became the wonder of all who have ever heard him whistle. He never gave the chirping whistle peculiar to the Robin, but continually repeated notes gathered from his admiring friends. He developed an aptness for mimicry quite equal to the best-bred Mockingbird, and a talent for sweet music which quite surpassed that of the latter.

The home of this feathered wonder was a large, handsome wire cage, presented him by his honor, Mayor Powell. The Robin preferred this cage to freedom, and seemed to love the society of man and to be perfectly contented. In fact, he made his escape once and returned of his own free will after an absence of about an hour. Another

time he left his cage and wandered from the market and was picked up, completely exhausted, by a Judge of the probate court, who took him back. Once he paid a visit to a favorite officer at the police station. But *embonpoint* developed during the latter years of the decade of his life, and rendered him so liable to accidents abroad that he was never allowed to leave the narrow confines of his home. He received about the same treatment and food as a Mockingbird, but rejected all opportunities to bathe oftener than every other day and then insisted upon having his tub of fresh water.

This bird was the pride of his owner, who refused tempting pecuniary inducements to part with him; but all visitors to the Robin's cage were cordially welcomed by Mr. Ash, who delighted in having his pet seen and heard, that all might comprehend his really wonderful talent.—E. A. MEARNS, *Ft. Adams, Newport, R. I.*

A Yonkers Robin

Two years ago this summer, at Yonkers, N. Y., the ice-man carried into a kitchen an unfledged Robin picked up in the street. Kind-hearted Bridget fed and cared for the foundling, after trying in vain to restore it to the nest. It was placed in a large cage until old enough to enjoy the freedom of the house. Once a female Robin flew to the window-sill with a worm; and whenever the cage was put out-of-doors Robins visited it and talked to the little one. One day five of its relatives lighted on the cage, as if meditating a *coup d'etat*.

The bird would have been released in due time, but for a catastrophe. One luckless night, the cage having been left out, a 'self-supporting cat' clawed poor Robin, wounding him desperately, and permanently injuring one wing. His life was saved, but the wound never healed, and whenever the bird is excited, drops of blood exude.

Robin calls for his oatmeal each morning, and will not be quiet until fed from the spoon of the master of the house. He

is fond of all of the family, even the dog, a Gordon setter, on whose head he likes to perch; but he loves best his 'Bebe,' as he calls Bridget, and when she goes out for a day he keeps a mournful silence until overjoyed at her return. He has all the Robin vocabulary and song, besides various whistles and tunes taught him by Bridget. He modulates his calls in close imitation of his teacher, and when with her is as happy as any outdoor bird, perching on her shoulder and responding to her in the most winsome manner.

As it is a common occurrence for adventurous young birds to fall from the nest, perhaps some readers of BIRD-LORE will copy Bridget, and add their experience to the "Ethics of Caging Birds."—ELLA GILBERT IVES, *Dorchester, Massachusetts.*

An Albino Robin

When the Robins returned to St. Albans, Vermont, in the spring of 1897, a pure white Robin with a red breast came with them. This 'woman in white' made its home in an orchard, where it doubtless nested, as it was seen carrying building material there. Though the nest could not be found, the bird stayed upon the farm through the summer, becoming very tame as the months passed, and coming to the door for crumbs daily.

The following spring the same bird was seen upon the same farm, where it built a nest in a maple, in the dooryard. This little house, or more literally this little housekeeper, attracted so much attention that she deserted the nest, after three eggs were laid, and built another upon the opposite side of the same tree, in which four young Robins were duly hatched. A high wind soon brought both nest and young to the ground. A third nest was then made in the same maple, in which five young Robins found a secure home. Both nests and young birds were in every way normal; not a hint in a single feather betrayed their unique motherhood.

The bird did not return in the spring of 1899. In April of this year, however, it came to the same neighborhood, and has built a nest in an apple tree upon a lonely

hillside, a third of a mile from its former nesting sites. It is often described as "as large as a Dove," though, after much careful observation, I am certain that its color, only, makes its size deceitful. Its red breast, contrasted with the pure white, also seems much redder than in the ordinary Robin. Altogether it is as handsome a bird as can well be imagined, its pink eyes being noticeable as it sits upon the nest, and its color making it easily seen as it crosses the meadows or hops about upon the opposite hillside in search of grasshoppers.—NELLY HART WOODWORTH, *St. Albans, Vt.*

A Successful Bird Club

[The following account of the formation of a Bird Club at Newburgh, N. Y., has been prepared at our request, as an illustration of the interest in birds which may be aroused by an enthusiastic leader. There is no reason why ornithologists throughout the country could not achieve the same success which has attended Mr. Robinson's efforts to share his pleasures in bird-study.—ED.]

Wherever there have been organizations studying the course laid down by the Chautauqua during the past winter, the subject of Birds has been presented through that delightful little book 'Birds through an Opera Glass.' It is doubtful if there was any gathering of people who took up the study with more enthusiasm and interest than the Chautauqua Circle, in the city of Newburgh, N. Y. The work was under the direction of Francis B. Robinson, of that city, who has been a close student of Nature for many years, and he gave the preliminary talk, tracing the development of bird-life, and noting the birds that are now extinct and those that are becoming so. This talk, with a lecture on 'Expansion,' took up a long evening, and it was found necessary to devote the entire evening to Birds alone, and Friday evenings of each week during March, April and May were used for this purpose. The study was pursued systematically by over two hundred people, among them lawyers, doctors, ministers and teachers, and each active member was assigned a bird to report on. This

made it necessary for the student to become familiar with the bird he or she had been assigned, and a personal knowledge of the subject was acquired. The Free Library was besieged, and all books on birds were brought out of their seclusion and put once more into circulation. Many new works were sought at the book-stores, and bird-literature is still in demand. The second evening was devoted to Crows, Robins, Bluebirds, Song Sparrows, Jays and Blackbirds—all birds that are to be found at that season of the year. Then came the Sparrow family, with the Junco, Finches, Cross-bills, Nuthatches and Woodpeckers, that are abundant in early April. Then the Flycatchers and Thrushes, and finally an evening was devoted to the Warblers, some twenty fine specimens being shown in skins. Within the next week, members had identified the Mourning, Chestnut-sided, Black-throated Blue, Black and White, and other spring migrants and resident birds that were found in the shaded streets and parks. Excursions were made into the highlands and country, and incidentally a love of flowers and nature was imbued.

The beautiful pictures furnished the academy through the regents by the Museum of Natural History were shown on the first of June, and as each bird was pictured, its haunts and habits were commented upon. On the 9th a party of over sixty people took the delightful sail down the Hudson, and journeyed to the Museum of Natural History, where Mr. Chapman directed them to the case of birds which he has arranged purposely for bird-students. A beautiful case of water-birds, land-birds and two 'seasonal' cases, all of the birds found within fifty miles of New York City, were of special interest to the class, and much time was spent in this room. Since the close of study it is a subject of remark that more birds have been named and noted in the past few weeks than ever before, and it is no uncommon sight to see gray-haired students in the yards and country roads, opera glass in hand, watching for some feathered mystery to appear. Red-eyed, Warbling and Yel-

low-throated Vireos are especially attractive, and their strong, clear notes may be heard all day long, and many of their cup-shaped nests have been discovered. Thus a new interest in outdoor life has been unfolded and a new pleasure found.

Cowbird in a Dove's Nest

On May 25, 1899, at Rock Hill, Pa., I found fifteen or more Doves' nests in one orchard. While looking for a suitable place in which to put my camera, I noticed a Cowbird flutter off a large Grackle's nest, and on examination found the nest to contain only a Cowbird's egg. Three days later I discovered that a Dove had deposited two eggs in this nest. Circumstances now prevented me from visiting the nest for three weeks, when I found a Cowbird ready to fly



YOUNG COWBIRD AND TWO DOVE'S EGGS
IN OLD GRACKLE'S NEST

Although I watched the nest for some time to see how the Doves would feed the young Cowbird, they did not return, and I regret to say I did not succeed in learning the outcome of this interesting case.—CHAS. D. KELLOGG, *Philadelphia*.



YOUNG WARBLING VIREOS AND NEST
Photographed from nature by R. W. Hegner, Decorah, Ia.



RED-EYED VIREO ON NEST
Photographed from nature by F. M. Chapman, at Englewood, N. J., June 6, 1903

TWO VIREOS' NESTS

Book News and Reviews

BIRD HOMES. THE NESTS, EGGS AND BREEDING HABITS OF THE LAND BIRDS BREEDING IN THE EASTERN UNITED STATES, WITH HINTS ON THE REARING AND PHOTOGRAPHING OF YOUNG BIRDS. By A. RADCLYFFE DUGMORE. Illustrated with photographs from nature by the author. Doubleday & McClure Co. 8vo. Pages xvi-183, 50 half-tone ill., and 16 colorotypes. \$2 net.

This attractive volume is to be compared only with Davie's 'Nests and Eggs of North American Birds', from which it differs in arrangement, the descriptions being grouped according to nesting-site, and not systematically as in Davie, while Mr. Dugmore gives a short description of the plumages of the species treated, but generally fails to mention the authority for statements not based on his own experience, and, in this respect, the book is less useful to the working ornithologist than Davie's. In its illustrations, however, it is immeasurably superior to Davie's book; in fact, we can conceive of no better demonstration of the superiority of the camera over the pen or brush in depicting birds' nests than that furnished by a comparison of Mr. Dugmore's beautiful plates with those contained in Davie's 'Nests and Eggs.'

Mr. Dugmore will be known to ornithologists chiefly by his illustrations in Scott's 'Bird Studies.' In the present work, however, he shows a far clearer perception of the true value of the camera to the ornithologist, and his photographs as here reproduced in black and white are so eminently satisfactory that we cannot but regret the attempt to produce any of them in color.

Mr. Dugmore has devoted much time to rearing young birds, and his notes on the habits of a number of our common birds in confinement contain no little amount of original and valuable information. His position in regard to egg-collecting is in accord with that of all true

ornithologists, and we are assured that his work will exert a widespread influence in creating and fostering an interest in bird-study and a proper regard for the rights of birds.—F. M. C.

NATURE'S CALENDAR. BY ERNEST INGERSOLL. With 12 illustrations from original photographs by CLARENCE LOWN. New York and London, Harper & Brothers 12mo. Pages xii + 270. 12 full-page half-tones.

'What to see in nature and when to see it,' is the motto of this book, and its author's skill with the pen and knowledge of the literature of natural history have served a good purpose in presenting in attractive and useful form a large amount of information concerning the seasons and their plant and animal life.

The matter is arranged under months, a general description of the characteristic phenomena of each month being followed by calendars wherein are summarized the statements in relation to Mammals, Birds, Fishes, Batrachians and Reptiles, and Insects. "The dates here given," it is said, "refer to an ordinary season about New York City," and wide margins are left (the text occupying less than half of each page) for the entry of the reader's observations.

Miss Helen Ingersoll, the author's daughter, is accredited with assistance "in respect to local botany." Prof. Clarence M. Weed is responsible for the parts relating to insects, and for information in regard to mammals, reptiles, batrachians and fishes the author quotes from Merriam, Burroughs, W. E. Cram, De Kay, C. C. Abbott, John Bell (who is spoken of as "Thomas Bell"), Mearns, Kirtland, Allen, Hay, Goode, and others; but for the part relating to birds he gives no authority. This is the more to be regretted, for it is this portion of the book in which we are here especially interested and in which we find a number of records at variance with previously published data.

Thus the White-crowned Sparrow is said to occur in March, the Blackburnian Warbler is spoken of as among the earliest of its family, and is said to arrive the second week in April, a date which is also given for the first appearance of the Magnolia Warbler, but the Yellow Palm Warbler is not to be looked for until the fourth week of the month. The coming of the Yellow-throated Vireo is set down for the first week in April, and the Yellow-winged Sparrow, which is said to be "rarely seen" far from the seashore, is stated to reach us the second week in April. The Chebec is alluded to as possessing an exquisite voice, and is said to nest in bushes.

This lack of exactness, of which other evidences could be given, detracts from the value of the book for those who desire to compare their own records with those here given; but the general reader will find that the rise and fall of the bird-life of the year are described in an instructive and, in the main, accurate manner; and it is to the general reader, rather than the enthusiastic specialist, that the book is addressed.—F. M. C.

Bulletin No. 12 U. S. Department of Agriculture, Division of Biological Survey. LEGISLATION FOR THE PROTECTION OF BIRDS OTHER THAN GAME BIRDS. By T. S. PALMER, Assistant Chief of the Biological Survey. Prepared under the direction of Dr. C. HART MERRIAM, Chief of Biological Survey, Washington, Government Printing Office. Svo. Pages 94. Ills.

Only a person who has had occasion to ascertain the non-game bird law of a given state can fully appreciate the value of the service which Dr. Palmer has rendered to every one interested in bird-protective legislation by presenting, in one volume, the laws (or absence of them) of every state and territory in the Union and of the Canadian provinces. This 'Bulletin,' however, is not only of value as a reference book or 'digest,' but it reveals the surprisingly inadequate laws which exist in most of our states for the protection of non-game birds, and thus furnishes a definite point of departure in the attempt to secure for these

birds as effective legal protection as is generally accorded game birds.

But Dr. Palmer's work is not merely a compilation, over one-half of it being devoted to a 'General Discussion of Protective Legislation,' where are authoritatively treated such moot subjects as the definition of a game bird, the value of birds of prey, etc., with other matter relating to the needs of bird protection, destruction of birds for millinery purposes, issuance of permits for collecting, licenses, etc. Here also are presented histories of the Hoar, Teller and Lacey bird-protective bills and a slightly amended and annotated reprint of the model bird law proposed by the American Ornithologists' Union.

We cannot be too grateful to Dr. Palmer for the admirable manner in which, in this Bulletin No. 12, he has evolved order out of chaos in matters relating to legislation for non-game birds.—F. M. C.

WARBLERS' SONGS. By LYNDY JONES. Wilson Bulletin No. 30. Oberlin, Ohio January, 1900. Pages 56.

The philosophic student of birds' language, will find in this paper much to interest him, while bird-lovers, to whom the Warblers are a source of despair, may receive from it very effective aid in making identifications.

It was a very happy idea of Mr. Jones to thus bring together between two covers, what has been written in description of Warblers' Songs, and the value of his paper has been greatly increased by the addition of his own observations and those of the members of the Wilson Ornithological Chapter, who have assisted him.

An 'Introduction' gives the reasons for presenting the paper, and the manner in which the material contained in it was secured, and is followed by an extended bibliography and discussion of the types of Warblers' songs, song-periods, kinds of song, variability, etc. He writes feelingly of the difficulties encountered in attempting to describe the songs of most Warblers, and then treats serially each of the fifty-seven species and sixteen subspecies of this family which have been found in North America.—F. M. C.

CATALOGUE OF CANADIAN BIRDS. PART I. WATER BIRDS, GALLINACEOUS BIRDS, AND PIGEONS. By JOHN MACOUN, Naturalist to the Geological Survey of Canada, Ottawa. 1900. Pages viii + 213.

The author of this important work states that he "he has endeavored to bring together facts on the range and nesting habits of all the birds known to reside in, migrate to, or visit, the northern part of the continent. In addition to the Dominion of Canada, he has therefore included Newfoundland, Greenland and Alaska." To original information gathered during the past twenty years in explorations which have taken him from the Atlantic to the Pacific, and that secured by Mr. W. Spreadborough, who, since 1889, has been at work under his supervision, he adds data from MS. notes of various duly accredited observers, and those which have already been recorded by the more authoritative writers on the birds of the great region embraced by his limits. In this compilation two important papers have apparently been overlooked, viz.; Blakiston's 'On the Birds of the Interior of British America' (*Ibis*, 1863, p. 39 *et seq*), a fully annotated list of 250 species, and Merriam's 'List of Birds Ascertained to Occur Within Ten Miles of Point des Monts, Province of Quebec' (*Bull.*, N. O. C. VII, 1882, p. 233 *et seq*), a list of 180 species.

The annotations under each species consist of remarks on its general range and notes on the breeding of species known to nest, with, in every instance, the authority for all statements not based on personal observation, and a list of museum specimens with data. The book is, therefore, an invaluable reference manual for those in search of information in regard to the birds of northern North America, and we note with pleasure that the second and concluding part is promised for an early date.—F. M. C.

A MONOGRAPH OF THE FLICKER. By FRANK L. BURNS. *Wilson Bulletin* No. 31. Oberlin, Ohio, April, 1900. Pages 82.

To know that you have in your hand all the more important facts concerning

the life-history of a common bird affords one a sense of satisfaction which can be appreciated only by those who, in search of information concerning the habits of some familiar species, have been obliged to wade through a library. For five years Mr. Burns has devoted his available time to securing the information presented in this monograph. Correspondence with other ornithologists, whose assistance is fully acknowledged, search in the literature of ornithology, and personal observation in the field, have resulted in making what, as far as we know, is the most complete existing biography of any North American bird. Beginning with its scientific and vernacular names (of which the astonishing number of 124 are listed) the author treats his subject under the headings: 'Geographical Range,' 'Winter Range,' 'Breeding Range,' 'Migration,' 'Flight,' 'Roosting,' 'Drum Calls,' 'Voice,' 'Mating,' 'Nidification,' 'Eggs,' 'Incubation,' 'Young,' 'Molt and Renewal,' 'Food,' 'Enemies,' 'Measurements,' 'Plumage,' 'Hybridism,' 'Atavism,' 'Conclusion.'

It is not possible for us to go into details, but we cannot conclude this brief notice without congratulating Mr. Burns on the excellence of his work, and thoroughly commending his method of presentation. When our bookshelves contain a row of biographies on our birds, similar to this one, we may consider ourselves well equipped to further elucidate the problems which such a close study is sure to present, and we would strongly urge every ambitious ornithologist who is undecided into what channel to turn his efforts, to concentrate them on a single species, and in due time the science he loves may be as deeply indebted to him as it is to Mr. Burns.—F. M. C.

THE AVIFAUNA OF LOUISIANA. By GEO. E. BEYER. Reprint from the *Proc. of the Louisiana Society of Naturalists*, 1897-1899. 8vo, pp. 1-45.

This is an exceedingly welcome contribution to the faunal literature of a state concerning the bird-life of which we possess very little published information. Professor Beyer has been obliged to rely

largely on his own researches, and his list of 323 species and subspecies is evidence of his diligence afield. When we note, however, that such species as the Nashville, Canadian, and Wilson's Warblers and Common Tern have not as yet been reported from Louisiana, it is clear that the state still offers a profitable field for the faunal ornithologist. Professor Beyer's work is well done, but we would suggest that more critical examination of his material would perhaps cause him to change his identification of several species; among them "*Tympanuchus americanus*," which, as he records it only from the south-western part of the state, is probably *T. a. attwateri*: "*Ammodramus caudacutus*, which is doubtless *A. nelsoni*;" and "*Ammodramus maritimus*," which presumably is *A. m. fisheri*. These, however, are minor defects, and the paper as a whole bears evidence of care in its preparation, which makes it a trustworthy source of reference.—F. M. C.

PRELIMINARY LIST OF BIRDS, RESIDENT, VISITANT, MIGRANT, OR ACCIDENTAL, OBSERVED IN THE VICINITY OF MANCHESTER, N. H. Compiled by FREDERICK W. BATCHELDER, assisted by EDWARD H. FOGG. Proc. Manchester Institute of Arts and Sciences. Vol. I, 1899, pp. 123-138.

This is a briefly annotated list of 132 species, and is designed to form a working basis for further observation. It is an outgrowth of the activity of the ornithological section of the Manchester Institute and the 'Reports of the Meetings' of this section which precede the 'List' (pages 117-121) should prove both suggestive and stimulative reading for the members of other societies devoted to the study of birds.—F. M. C.

Book News

CIRCULAR No. 29, of the Biological Survey of the U. S. Department of Agriculture, signed by James Wilson, Secretary of Agriculture, places the administration of the Lacey Bill, so far as it concerns the importation and preservation of animals, in charge of the Biological Survey, under the immediate direction of the Assistant Chief of

the Survey,—an appointment which all advocates of the Lacey Bill will regard with unbounded satisfaction. This circular also presents the Lacey Bill in full and explains the manner in which it is proposed to make its provisions effective.

Circular No. 28, of the Biological Survey, by Dr. T. S. Palmer, Assistant Chief of the Survey, is a 'Directory of State Officials and Organizations Concerned with the Protection of Birds and Game,' a publication which admirably supplements Dr. Palmer's Bulletin No. 12, noticed above.

THE increasing demand on the part of the public for information concerning local bird-life is frequently manifested now-a-days by the appearance in the press of popular articles by ornithologists, whose signature gives to their contributions a value not generally to be found in newspaper natural history. Thus we have lately received copies of the San Juan (Porto Rico) 'News,' Detroit 'Free Press,' and 'Prince Edward Island Magazine,' containing instructive articles on local birds, by G. B. Pratt, H. S. Warren and John MacSwain, respectively.

THE 'Western Ornithologist'—formerly the 'Iowa Ornithologist'—is published on the fifteenth of every other month at Avoca, Iowa. It is edited by Chas. C. Tryon, with the assistance of Carl Fritz Henning and David L. Savage, who are to be congratulated on both the appearance and contents of their magazine.

Mr. Reginald Heber Howe, Jr.'s quarterly 'Notes on Rhode Island Ornithology,' which is published by the editor at Brookline, Mass., contains interesting records from the state to a study of the avifauna of which it is devoted.

WE learn from the July 'Iris' that at a recent meeting of the British Ornithologists' Club a resolution was unanimously carried that any member of the "Union" who should become responsible for the destruction of certain birds, which the persecutions of egg-collectors threaten to exterminate in Great Britain, should be severely censured by the "Union."

Bird-Lore

A Bi-monthly Magazine
Devoted to the Study and Protection of Birds

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

Published by THE MACMILLAN COMPANY

Vol. II AUGUST, 1900 No. 4

SUBSCRIPTION RATES.

Price in the United States, Canada, and Mexico, twenty cents a number, one dollar a year, postage paid.

Subscriptions may be sent to the Publishers, at Harrisburg, Pennsylvania, or 66 Fifth Avenue, New York City.

Price in all countries in the International Postal Union, twenty-five cents a number, one dollar and a quarter a year, postage paid. Foreign agents, MACMILLAN AND COMPANY, LTD., London.

COPYRIGHTED, 1900, BY FRANK M. CHAPMAN.

Bird-Lore's Motto:

A Bird in the Bush is Worth Two in the Hand.

BIRD-LORE is printed at Harrisburg, Pa. and in the future it will be mailed from that city. All communications, therefore, in relation to the publication of this magazine, notices of change of address, etc. should be addressed to The Macmillan Co., Crescent and Mulberry streets, Harrisburg, Pa.

AN accumulation of notes from the field and publications for review has compelled us to omit from this issue the Department for 'Teachers and Students.'

THE position taken by the Audubon Societies, thus far heard from, in regard to the proposed agreement with the Millinery Merchants' Protective Association, to the effect that to sanction, even passively, the killing of birds anywhere would violate the cardinal principles of the Societies, is unanswerable, and renders impossible further negotiation with the milliners, which we are assured would have resulted in securing for our birds such protection as we cannot now expect to give them for many years. Thus, for example, when discussing with the representatives of the

milliners the proposed agreement, the editor of this magazine demanded that the term 'North American bird' must be interpreted to mean any species of North American bird without regard to the country in which it was found, and that birds whose feathers could not be distinguished from those of North American birds be included, the demand was agreed to; and when it was explained that such agreement meant the complete abandonment of aigrettes and the practical discontinuance of the use of the feathers of Grebes, Gulls, and Terns, they still accepted this interpretation of the agreement.

Now, in our opinion, when houses representing 90 per cent of the millinery trade in this country propose not to deal in the feathers of the very birds which we are at present using our best efforts to protect, the proposition is at least worth considering. We do not, however, intend to discuss the matter further, for, as we have said, the reply made by the Audubon Societies thus far heard from is unanswerable, and as these Societies represent a majority of the more active Societies, we sincerely hope that their verdict will be accepted by those which have not as yet acted on the matter.

IN commenting on the milliners' proposed agreement in 'The Auk,' the official organ of the American Ornithologists' Union, Dr. J. A. Allen writes, "This appeal is certainly entitled to respectful consideration, since, on the one hand, it guarantees on the part of a powerful association of dealers, that the killing of North American birds shall at once cease, and that all traffic in them for such use shall also cease after a certain date."

We earnestly hope, however, that the American Ornithologists' Union will support the Audubon Societies in the stand they have taken, for nothing could be more disastrous to the cause of bird protection than lack of harmony among its advocates.

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 (President of the Audubon Society of the State of Connecticut), Fairfield, Conn., to whom all communications relating to the work of the Audubon and other Bird Protective Societies should be addressed. 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

New Hampshire.....	MRS. F. W. BATCHELDER, Manchester.
Massachusetts.....	MISS HARRIET E. RICHARDS, care Boston Society of Natural History, Boston.
Rhode Island.....	MRS. H. T. GRANT, JR., 187 Bowen street, Providence.
Connecticut.....	MRS. WILLIAM BROWN GLOVER, Fairfield.
New York.....	MISS ENMA H. LOCKWOOD, 243 West Seventy-fifth street, New York City.
New Jersey.....	MISS ANNA HAVILAND, 53 Sandford Ave., Plainfield, N. J.
Pennsylvania.....	MRS. EDWARD ROBINS, 114 South Twenty-first street, Philadelphia.
District of Columbia.....	MRS. JOHN DEWHURST PATTEN, 3033 P street, Washington.
Delaware.....	MRS. WM. S. HILLES, Delamore place, Wilmington.
Maryland.....	MISS ANNE WESTON WHITNEY, 715 St. Paul Street, Baltimore.
South Carolina.....	MISS S. A. SMYTH, Legare street, Charleston.
Florida.....	MRS. C. F. DOMMERICH, Maitland.
Ohio.....	MRS. D. Z. McCLELLAND, 5265 Eastern Ave., Cincinnati.
Indiana.....	AMOS W. BUTLER, State House, Indianapolis.
Illinois.....	MISS MARY DRUMMOND, Wheaton.
Iowa.....	MRS. L. E. FELT, Keokuk.
Wisconsin.....	MRS. GEORGE W. PECKHAM, 646 Marshall street, Milwaukee.
Minnesota.....	MRS. J. P. ELMER, 314 West Third street, St. Paul.
Kentucky.....	INGRAM CROCKETT, Henderson.
Tennessee.....	MRS. C. C. CONNER, Ripley.
Texas.....	MISS CECILE SEIXAS, 2008 Thirty-ninth street, Galveston.
California.....	MRS. GEORGE S. GAY, Redlands.

Bird Protection and the Merchant Milliners

This year is full of significance in matters relating to bird protection, and a new impulse seems sweeping over the country regarding the entire matter. Moreover, the increased interest is traceable to perfectly sound and reasonable thinking, brought about by the increase of nature-study and the systematic circulation of the accepted and indisputable facts concerning the relations between birds and agriculture, as well as the attention attracted by protective legislation.

To bear out this latter statement, I would ask every officer of an Audubon Society to read Bulletin No. 12 of the U. S. Department of Agriculture, Division of Biological Survey, entitled 'Legislation for the Protection of Birds Other

than Game Birds.' This pamphlet of nearly one hundred pages, written by T. S. Palmer under the direction of Dr. Merriam, gives all existing laws, so that it may be seen at a glance in what States, or counties of a given State, bird laws are either absent, defective, or efficient. A thorough reading of this summary is sure to bring about much State legislation as well as lead to national cohesion, for, as the introduction says, 'The protection of birds is a national, not a local, question.'

The history of legislative protection is briefly given, beginning in 1791, when New York enacted a law protecting Heath Hens, and ending with the text of the Lacey Bill, which became a law in May last. This bill gives wide discretionary powers to the Department of Agriculture, and is of the greatest importance.

Another matter, formulated, doubtless,

owing to the legislative attention given bird protection, is the proposed agreement between the Millinery Merchants' Association and the various bird protective organizations, which was published in the June issue of this magazine, the Editor requesting that opinions regarding the proposition be forwarded him for transmission to the aforesaid association.

Owing to the fact of its being the vacation season, it has been impossible to hear from all the Audubon Societies. The New England Societies—New Hampshire, Massachusetts, Rhode Island, and Connecticut, together with Wisconsin, stand firmly together and *against* the proposed agreement *in toto*; Connecticut and Wisconsin having expressed their objections in detail through Mr. Willard G. Van Name and Prof. E. A. Birge, of the University of Wisconsin, respectively, while Mr. William Brewster, the President of the Massachusetts Society, a thorough scientist and an influential member of the American Ornithologists' Union, is also wholly opposed to the measure. He writes: "If any attempt is made to have this agreement accepted by the American Ornithologists' Union I shall use all the influence I possess to defeat it. * * *

It does not seem to me to be so much a question of expediency as of absolute right and wrong. No such compromise is possible."

From a political, as well as an ethical standpoint, it is difficult to believe that two opinions can be held about this matter, either by the American Ornithologists' Union, representing the strictly scientific, or the Audubon Societies, the more secular but equally logical side of bird protection.

We should not criticise the milliners, who, having a perfectly good right as business men to protect their invested capital in any way *not in violation of the law*, seek to prevent the enactment of laws prejudicial to their own interests, by making an agreement to disarm those by whose influence the law is most surely, if slowly, drawing about their

traffic. But should we not bring upon ourselves and our work deserved reproach if we became party to any such agreement? Almost all reforms must necessarily cause temporary inconvenience to some one, but that objection cannot be held against the bird-protective reform unless the suppression of the barbarous trade of the plume-hunter is objected to. The millinery trade can find ample scope for its capital and work for its employees in handling ostrich plumes and the feathers of numerous species of domesticated birds, the supply of which is as easily regulated as that of the barnyard fowl, and with the use of which no one will interfere. We are not seeking, as some suppose, to break up a bread-winning industry.

The case may be summed up as follows: A *certain number* of importers, manufacturers and dealers in raw and fancy feathers are willing to promise not to buy any more feathers of North American birds. They retain, however, the right to manufacture and sell all the plumage of such birds now on hand until such sale shall be stopped by a law or laws, *which shall be approved by the A. O. U. and the Audubon Societies and also do justice to the trade!* In return for this most curiously worded concession, the A. O. U. and the Audubon Societies are asked to give a pledge to prevent the enactment of the very laws that shall terminate and fix the time when the permission to sell the feathers of the North American birds on hand shall end!

We are further asked to pledge ourselves not to interfere with the manufacture or selling of the plumage or skins of "edible birds, game birds killed in their season, and all birds which are not North American."

What birds are inedible? What is a North American bird? Is a bird taken in Brazil during its winter sojourn American or a Brazilian bird? Who is to settle this matter of citizenship, who furnish the birds with passports, who give them protective papers of citizenship that the plume hunter shall respect?

It appears that there are some few people (merely enough to furnish the usual ex-

ception that proves the rule) who, in the first enthusiasm at the knowledge that the milliners had offered a compromise, read this agreement to mean that if we would promise to allow the milliners to traffic unmolested in the feathers of all birds *not North American*, they would in turn refrain from dealing in the plumage of the native birds. They hailed this as at least a sure means of saving our own birds, even though it put a premium upon the slaughter of the equally valuable species of other countries, saying "Foreign countries must look after their own birds; we cannot sacrifice ours because they cannot protect theirs." Also arguing that, as it seems at the moment improbable that the United States will pass a law making the use of the plumage of foreign birds illegal, there can be no harm in promising not to work in favor of such a measure.

Considering the proposition from even this ultra practical standpoint, no such construction can be put upon it as it is worded. We are asked plainly to pledge ourselves to refrain from pushing any legislation which the millinery trade shall consider unjust to itself.

The ethical side of the question is even more plain, but of equal importance. No Audubon Society that is true in spirit, as well as in letter, to its platform and constituents can sign this agreement; for to do so is literally saying to its members, "We will not interfere with you even if you cover your hats with birds *so long as they are marked 'killed in Europe'!*"

As I have always said, the law is the only path by which satisfactory protection can be given to the birds. The law is the voice of public opinion, sometimes tardily heard, but sure to speak at last. Public opinion has been turned toward bird protection largely by the very societies who are now asked to pledge away their legislative power for what? A mess of pottage composed of *incredible native birds!*

The fact that international laws may be difficult of passage is no reason for ceasing to work for them. "Every man for himself and the devil take the hindmost," is a poor motto for organizations

such as ours. It was this spirit that opposed bitterly the International Copyright bill not so very long ago. Notwithstanding this, International Copyright is now a law!

MABEL OSGOOD WRIGHT.

Reports of Societies

RHODE ISLAND SOCIETY

(Third Annual Report, March 26, 1900)

In the third annual report of the Society, it cannot be said that Rhode Island women have given up wearing feathers, or that our boys have stopped collecting eggs; but there can be no doubt that a public sentiment in favor of bird protection has been aroused and is steadily growing, not only in our state, but in all parts of the country. Audubon Societies exist in at least twenty different states, and many other organizations are working on the same line.

During the past year five Bird Commissioners have been appointed by the Governor of Rhode Island, and from the character of those who have accepted the office, we have every reason to believe that the laws will be enforced. A committee appointed by the Audubon Society will do what is possible to secure better legislation in regard to certain useful birds which are now unprotected, such as Hawks, Owls, Meadow-Larks, and Gulls.

The Society has endeavored to keep its aims constantly before the public. About fifteen hundred leaflets have been distributed. Thirteen hundred pictures of birds, copied by the Massachusetts Society from their calendar, and accompanied by text, have been purchased and sent to the superintendents of our country schools and given by them to scholars interested in nature study.

The present Commissioner of Public Schools, Mr. Thomas B. Stockwell, is anxious to promote the study of birds, and at the request of your secretary, has kindly written a letter to the school superintendents of the state, asking them to

call the attention of the teachers to the purposes of the Audubon Society, and to bespeak their coöperation.

The exercises appointed by Mr. Stockwell for Arbor Day will this year relate largely to birds; an appropriate plan, since birds are of the utmost importance to forestry and agriculture.

The expediency of having a special Bird Day established by law, or of combining Bird Day with Arbor Day, is still under consideration by the Directors of this Society.

The latest report from the United States Department of Agriculture alludes to the extraordinary interest in bird study which has recently developed, and attributes it to the introduction of nature study in the schools, and to the efforts of the Audubon Societies in the cause of bird protection. The report considers the chief obstacle to the success of bird study in the schools to be the lack of requisite knowledge on the part of teachers.

On the 9th of last October a millinery exhibition was held by this Society at the Narragansett Hotel. The milliners entered cordially into the scheme, and about one hundred and fifty hats were exhibited; the display proving conclusively that the plumage of wild birds can be discarded without violating the laws of fashion. In spite of unpleasant weather, the parlors were thronged with visitors. Four ribbon prizes were awarded; but it is now the opinion of the committee in charge that prizes, even of that nature, were a disadvantage.

A lecture upon winter birds was given under the auspices of the Society, on January 27, by Miss Annie L. Warner, of Salem, Massachusetts.

Mr. Frank M. Chapman lectured at Sayles' Memorial Hall on the 16th instant upon "Bird Studies With a Camera." The lecture was illustrated by fine stereopticon views. It was free to the public, and the large hall was filled to its utmost capacity.

The annual meeting of the Kingston branch was well attended, and addresses were made by Dr. George W. Field, Pro-

fessor Card and your secretary. Several informal talks have also been given by your secretary in various places.

The traveling library is still used by the branch societies, and four new books have been purchased by the committee.

Our membership at the present time numbers nearly four hundred and fifty. Of this number one hundred and eight persons are so-called active members and pay an annual fee of one dollar. As it is almost entirely by means of the fees that the work of the Society is carried on, I would urge those who think the birds worth saving to assist us by bringing in new members. This is not a difficult task, for many are interested in the cause and need but little persuasion.

The young people are not so well represented in the Society as could be wished. Parents and teachers can interest them in nature study, teach them the usefulness of birds, and direct them in correct paths of research.

All members are again urged to protest against the use of wild birds and their plumage for millinery purposes, and to use their influence in every possible way to advance the work of bird protection.

ANNIE M. GRANT, *Sec.*

OHIO SOCIETY

(*First Annual Report*)

The Audubon Society of the state of Ohio has completed its first year as an organization. Its existence as a society is due to the untiring zeal of Miss Clara Russell. Humble, but strenuous efforts on her part led to the first meeting of October 8 in the Eden Park Shelter House, at which Dr. H. T. Keckeler presided, and finally to the meeting of October 21, 1898, in the Lecture Room of the Natural History Society, at which Mr. Wm. Hubbell Fisher presided, where organization was effected.

Among the plans devised to illustrate the purposes of the Audubon movement was to give from time to time a public lecture, and W. H. Venable led the series by delivering an address before the Society

and its friends on April 19, in the Teachers' Club Room.

Another plan acted upon was the sending of notices to the principals of the public schools, proposing the celebration of Bird Day in conjunction with Arbor Day. With these proposals there were compliances, and some of our own members took part in the exercises held in the suburbs on that day. Later, a committee called the School Committee, was appointed to personally visit school districts where interest in the purposes of the Audubon Society seemed lukewarm, and a knowledge of the Society and its aims was still further extended. At the September meeting, another step onward was taken when the members voted to consider some subject of ornithological interest at each monthly meeting.

It may be stated in conclusion, that while this Society has avowed one of its purposes to be the prevention of cruelty and wanton destruction of birds and their nests, eggs and haunts, it aims to do so, not by prosecuting but by educating.

One of the fondest hopes of its founder, Miss Russell, was that a wide dissemination of a knowledge of birds would evoke such an interest and friendliness for them, that women could not thoughtlessly wear their plumage and men and boys could not wantonly destroy them.

And when we consider that the majority of the Society's members are educators in either morals or intellect, it seems possible for right efforts to lead to its achievement.

Respectfully submitted,

HARRIET H. HASTINGS.

WISCONSIN SOCIETY

(Third Annual Report)

Very early in the history of the Wisconsin Audubon Society the executive officers decided that in no other way could they do such good work for bird protection as by arousing the interest of children in the matter, and finding that Mr. L. D. Harvey, the State Superintendent of Public Instruction, stood ready to assist them, they threw most of their energy into this chan-

nel. After three years they feel that results have justified this policy. By April 1, 1900, 380 school branches had been organized, with an aggregate membership of 10,290. In this way the Society is reaching not only the children but their parents, and although there has been scarcely any increase in the adult membership, there can be no question that a very wide-spread sentiment of opposition to the fashion of wearing feathers has sprung up, and that many hundreds of women who have not joined the Society have resolved to act hereafter in accordance with its principles.

The children are controlled and directed through Miss Boynton's little nature study paper, "By the Wayside, for which every school branch must subscribe. Each issue of this paper contains the description of some common bird, and prizes for observations and good reports are given to teachers and children.

Through the generosity of Mrs. George Gordon, of Milwaukee, it has been possible to purchase a small library of bird books, which have been placed in charge of Miss Bossert, 719 Franklin St., Milwaukee, who will be glad to receive gifts of additional volumes. These books are intended for the use of school branches.

In March a series of illustrated lectures upon birds and wild animals was given under the auspices of the Society, in different towns of the State, by Mr. Ernest Ingersoll.

All persons interested in bird protection are urged to become Associates, since it is upon this class of members that the Society depends for its income.

The different classes of membership are as follows:

Patrons, paying \$25.

Life Associates, paying \$5

Associates, paying \$1 annually.

Life Members, paying 25 cents, and not subject to further assessment.

Teachers and children paying no fee.

ELIZABETH GIFFORD PECKHAM,

Secretary.

MILWAUKEE, April 20, 1900.



BOWER OF SPOTTED BOWER-BIRD
(Showing sheep's bones used as decorations)
Photographed from nature by A. J. Campbell

Bird = Lore

A BI-MONTHLY MAGAZINE
DEVOTED TO THE STUDY AND PROTECTION OF BIRDS
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. II

OCTOBER, 1900

No. 5

The Bower-birds of Australia

BY A. J. CAMPBELL, Melbourne

Author of "Nests and Eggs of Australian Birds"
With photographs from nature



THE bower-building birds, with their cultivated tastes for architecture, are amongst the most interesting and beautiful of Australian birds, while some of their eggs are most remarkable in appearance. There are ten or eleven species, medium-sized birds—about twelve inches (more or less, according to the species) in length—compactly built and shapely. Their food is wild berries and fruits of various kinds. Occasionally they are not averse to the cultivated article, therefore the birds are not altogether in favor with orchardists.

The Satin-bird (*Ptilonorhynchus violaceus*)—the male especially beautiful for his lustrous, satin-like, blue-black coat and lovely violet eyes—dwells in the forests—more particularly the coastal—of eastern Australia. The females wear a grayish-greenish mottled dress, as do the young males, but differ in having the under surface a more yellowish tone. The males do not don their shining blue-black coat until the third or fourth year, some observers say the seventh year.

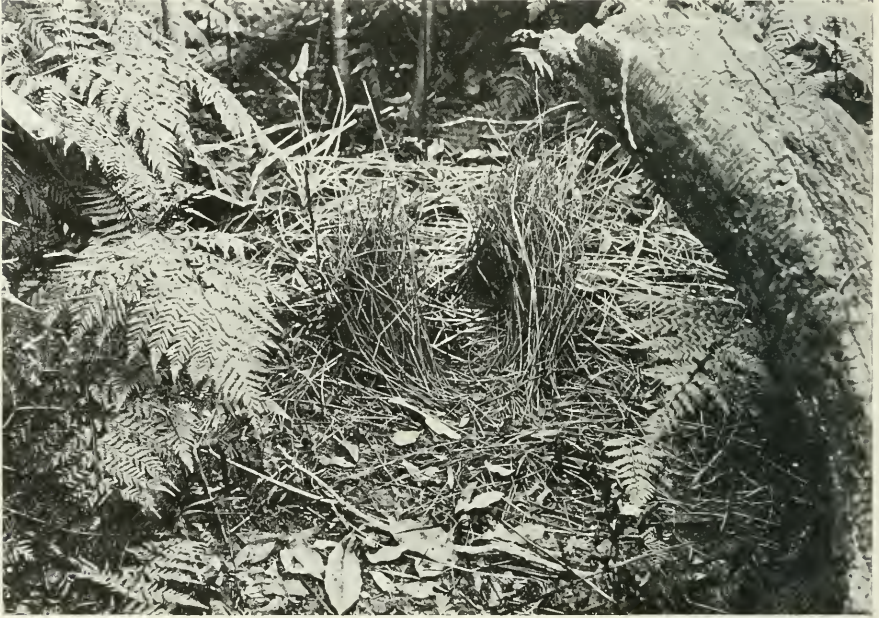
Satin-birds thrive in captivity. They are not excellent whistlers, but readily learn to articulate words and imitate familiar domestic sounds, such as the mewling of a cat, etc.

It is somewhat remarkable that notwithstanding these birds are plentiful in parts, their eggs are rare in collections—the eggs of all Bower-birds are rare—in fact, the eggs of two species have not yet been discovered.

The eggs (usually two, occasionally three) of the Satin-bird are of a rich cream color blotched irregularly with brown, and measure nearly $1\frac{3}{4}$ inches in length. The nest, which is usually situated

about twelve feet from the ground, in a shrubby tree or bush, is loosely constructed of twigs, leaves, etc.

The curious play house, or 'lover's arbor,' is built upon the ground. It has apparently no connection with the nests, which may be any distance away. One of these bowers I collected in Gippsland, Christmas-tide, 1884. It was situated amongst brackens in open forest. There was a cleared circular space about twenty-six inches across, in the ferns, floored with twigs well trodden down. In the center were erected two parallel walls of pliable twigs, tapering and arch-



BOWER OF THE SATIN-BIRD
Photographed from nature by D. Le Souëf

ing towards the top, which was twelve inches in height. The walls were ten inches long and six inches apart. In the avenue and roundabout were placed gay feathers of Parrots. It is strange that the builders of so neat a structure should construct a slovenly made nest. It has been ascertained that more than one pair of birds frequent the same bower, which is really a 'lovers' bower'—a *rendezvous* for match-making.

The illustration of a Satin-bird's bower *in situ* is from a photograph by my friend Mr. D Le Souëf.

The Spotted Bower-bird (*Chlamydodera maculata*) is a fine species inhabiting the arid and dry interior provinces, being especially at home

on sandy pine ridges or when the myall and brigalow (species of acacias) flourish.

This bird derives its name from the beautiful spotted markings of its plumage, which is of various shades of brown. The male wears on the back of the neck a band, or frill, of a most exquisite shade of rose-pink—a rare color in birds and only occurring in one other species (not a Bower-bird) in Australia. The Spotted Bower-bird has a harsh, scolding note, but it is not generally known that it is an accomplished mocking bird and can mimic the vocality of many birds of the bush, barking of dogs, etc.



NEST AND EGGS OF THE REGENT-BIRD

A farmer friend related to me an amusing story regarding the mimicry of a Spotted Bower-bird. His neighbor had been driving cattle to a given place and on his way back discovered a nest in a prickly needle-brush (*hakea*). In 'threading' the needle-like branches after the nest he thought he heard cattle breaking through the scrub and the barking of dogs in the distance, and at once fancied his cattle had broken away, but could see no signs of anything wrong. He heard other peculiar noises, and glancing at his dog as much as to say, "What does that mean?" he saw the sagacious animal with head partly upturned, eyeing a Bower-bird perched in the next tree.

The nest is somewhat loosely constructed of twigs, and is usually placed in a thick bush or amongst the forked branches of a small tree.

The eggs (two or three) are beautifully and wonderfully marked, greatly resembling those of the Regent-bird shown in the illustration.

During a trip towards the interior in September, 1893, I enjoyed the opportunity of examining many play-grounds of Spotted Bower-birds, and took successful photographs of some (see frontispiece). A typical bower may be described as being placed on the ground under a clump of bushes with thistles and other vegetation growing around. The floor inside and out is composed of twigs well trampled down; exterior portion of the walls made of twigs placed upright, interior sides composed of yellowish grass-stalks with the seeding parts uppermost. At either entrance of the bower is placed a number of bones—knuckles, ribs, and vertebræ—of sheep. In one instance ninety bones were counted at one entrance and ninety-two at the opposite end, while inside the bower itself were twenty-four bones, besides other ornamentation, such as seeds, small green branchlets, pieces of glass, etc. I know of one bower at which no less than 1,320 bones were counted.

The average dimensions of those play-grounds were—diameter over all, 55 inches; length of bower or avenue, 20 inches; width between the walls, 7 inches; height of walls, 12 inches; thickness of walls near base, 6 inches.

Of all the gorgeous birds that emblazon the sub-tropical scrubs of Eastern Australia, none exceeds the beauty of the male Regent-bird (*Sericulus melinus*) in his plumage of simple black and gold. The black velvety coat is strikingly relieved with the richest of bright yellow on the crown of the head, back of neck and greater part of the wings. The female wears an æsthetic brownish olive mottled dress, suited with dark brown eyes and bill. But the male has yellow-colored eyes and bill to match his glorious golden livery.

During an excursion to the luxuriant scrubs of the Richmond river district, I found Regent-birds fairly plentiful. But although, well aided by a hardy companion, I prosecuted a vigorous and toilsome search through dense labyrinths of humid scrub and thorny brakes of prodigal growth, while the thick foliage of the taller trees caused a perpetual twilight underneath, yet I returned without discovering its nest. It was an experience akin to seeking for the proverbial needle in a hay stack.

One evening I discovered a bower on the bare forest floor underneath thick scrub, and a male bird gaily tripping through it. The structure was perfect, but not so large as those I have seen built by other bower-building birds, being only 7 or 8 inches high, with walls 7 inches broad at the base, and an average width inside of $3\frac{1}{2}$ inches.

After much difficulty a photograph was taken of the interesting structure (see illustration).

The last discovered species and one of the most beautiful of Bower-birds, is the Golden Bower-bird (*Prionodura newtoniana*), which vies in its golden splendor with the Regent-bird. Its home is the rich palm scrubs of Northern Queensland. The rare and handsome bird was discovered by the collector, Mr. K. Broadbent, and was described and dedicated by Mr. DeVis (Queensland Museum) to the venerable ornithological savant, Prof. Alfred Newton.



BOWER OF THE REGENT-BIRD
Photographed from nature by A. J. Campbell

An authenticated nest and eggs of the Golden Bower-birds has not yet been discovered. But regarding its wonderful bowers—probably the most astonishing instances of bird-architecture known—Mr. DeVis writes: “From their [collector’s] notes and sketches it would appear that the bower is usually built on the ground between two trees or between a tree and a bush. It is constructed of small sticks and twigs. These are piled up almost horizontally around one tree in the form of a pyramid, which rises to a height varying from 4 to 6 feet. A similar pile of inferior height—about 18 inches—is then built around the foot of the other tree. The intervening space is arched over with stems of climbing plants, the piles are decorated

with white moss, and the arch with similar moss mingled with clusters of green fruit resembling wild grapes. Through and over the covered run play the birds, young and old, of both sexes. A still more interesting and characteristic feature in the play-ground of this bird remains. The completion of the massive bower, so laboriously attained, is not sufficient to arrest the architectural impulse. Scattered immediately around are a number of dwarf, hut-like structures—'gunyahs,' they are called by Broadbent, who says he found five of them in a space ten feet in diameter, and observes that they give the spot exactly the appearance of a miniature black's camp. These seem to be built by bending towards each other strong stems of standing grass, and capping them with a horizontal thatch of light twigs."



SCREECH OWL

Flash-light photograph by A. J. Penneck, Lansdowne, Pa.

The Orientation of Birds

BY CAPTAIN GABRIEL REYNAUD, French Army

Translated from the French by Mrs. Clara J. Coxé

(Concluded from page 105)



WE have demonstrated that the combined working of the five senses is limited, and is not sufficient to explain the act of distant orientation. The latter is governed by a particular organ that we have called the *sense of direction*. This sense has its seat in the semi-circular tubes of the ear. Numerous experiments have proved that any lesion which impairs this organ brings an immediate disturbance in the faculty of orientation of the injured bird.

The semicircular tubes of vertebrated animals are made up of three little anserated membranes filled with a liquid called *endolymph*. These three semicircular conformations are independent of each other, except in a point where their cavity is common, or where they issue in a little sack called *utricle*. They are generally situated in three perpendicular planes.

Next to the wonderful experiments of Flourens in 1824, and the autopsies of Mènières, their operation has been studied by Czermak, Harless, Brown-Sequard, Vulpian Boetticher, Goltz, Cyan, Brewer, Mach, Exuer Bazinski, Munck, Steiner, Ewald, Kreidl, Pierre Bonnier. We know now that their function is directly in harmony with the exercise of equilibration and quite independent of the sense of hearing. Mr. P. Bonnier, after studying in all the animal series the character of the organs which precede the labyrinthic formations, and lastly these themselves, in combining the records of comparative anatomy and physiology, and verifying them by clinical surgery, has been able to demonstrate that these organs lead directly to what he calls the *sense of attitudes*, which supplies the figures or images of position, of distribution and, consequently, movement and displacement in space.

We do not yet know in any very precise way the physiological excitant which governs the semicircular canals. While waiting until new researches permit us to settle this interesting point, we will try to determine the method of the operation of the sense of direction. This way of proceeding has nothing, after all, illogical in it. In the natural sciences, as well as in others, the knowledge of effect precedes that of cause.

The animal entering upon unknown ground takes on his return the reverse scent of the road, *more or less sinuous*, followed in going : arriving in known ground he directs himself to reach his end in a straight line.

The Carrier Pigeon freed at 500 kilometers from his cote, on his

return skirts along the railway which brought him to his place of liberation; he is there guided by the sixth sense. Having in this way reached the known horizon, at 80 kilometers from his dwelling, for example, he ceases having recourse to the sixth sense and travels by sight straight to his own roof. Other times the Pigeon does not think of making use of the five senses on arriving on unknown ground. In this case he follows his reverse scent as far as the Pigeon cote. He passes it sometimes. We have seen him, on coming back from a long journey, pass at 40 or 50 meters from the Pigeon cote, repress it, and enter at the end of an hour or two, having perhaps crossed the wrong direction in this way from 30 to 60 kilometers.

If we carry away at 10 kilometers from the Pigeon cote a Common Pigeon, accustomed to use exclusively the five senses, and a Carrier Pigeon, trained to long journeys, we will make an interesting discovery in freeing them simultaneously.

The Common Pigeon, flying by sight, will generally make up his mind much more rapidly than the Carrier, which will take his direction with care by the aid of the sixth sense.

From these facts we may conclude that the sixth sense does not combine with the five others. It enters into activity in the zone where the five senses are mute, and continues sometimes to operate in the known zone to the exclusion of the other senses.

It seems that it is not controlled by any impressions emanating from the route followed, and that it is in some way a subjective organ. We made, with regard to this, a very curious observation. When we transport in a railway car a basket of Pigeons having already the knowledge of travel, we see them show the greatest agitation when we arrive at a station where they have once been released, whilst they remain indifferent to other stopping places. Now, we will admit without much trouble, that a Pigeon shut up in a basket which, in turn, is enclosed in a dark car, cannot from the uproar tell one station from another. His sight and other senses are no help to him, since he is as completely as possible isolated from what is happening outside. However, he knows in a very exact way where he is by connecting it with his point of departure. We were then right in saying that an animal brought from a distance possesses an idea about his location quite subjective, independent of the medium that he crosses at the time.

We have explained that the animal lives cantoned in a domain where he meets with everything that the instinct of preservation of the individual and of the species calls for. This domain, more or less extended for the wild beast, is reduced for the Pigeon, for example, to the four walls of the Pigeon cote. Does he not indeed

find there, as the fabulist happily expresses it, "good supper, good lodging, and the rest of it?" On the other hand, if it is true that local knowledge is not strictly indispensable to assure the return to the lodging, and that the sense of distant orientation is strictly sufficient to guide the animal, we will admit without question that it is possible to make a movable Pigeon cote and accustom its inmates to a nomadic life.

Let us suppose that we have transplanted, with all its belongings, a Pigeon cote in the midst of new surroundings, without the least disturbance being brought to the existence of its inhabitants. The latter set at liberty from the time of its arrival will go far away, perhaps, but the Law of Reverse Scent will assure their return.

We remarked before that the straying Pigeon knows how to find again the point of release hardly caught sight of in the morning, and to which no agreeable remembrance, no interest, attaches him. With still more reason the inmate of a movable Pigeon cote must try to reconstitute his itinerary. If we carry him away a distance for the release he will come back to find his home at the precise point that it occupied when he left it. The movable cote, arriving in a new lodging place, would be in a condition to render almost immediate service in that locality. This new way of employing messenger Pigeons, unattainable, according to the ideas we have held up to this time, in matter of orientation, is only the strict application of our theory.

Some interesting experiments have proved in a conclusive manner that the fidelity to the natal Pigeon cote could be reconciled with a nomadic existence. A certain number of Pigeons are born and brought up in a wagon arranged as a Pigeon cote. They have no other lodging than their rolling habitation. It matters little to the Pigeon whether the wagon stops today in the heart of a valley, looks for shelter tomorrow in a forest, or settles itself for some time in the maze of houses which form a great city. If we should carry him away some distance from the cote for the release, he will not be guided on his return by his local knowledge, necessarily very slight, that he may have of the surroundings of his wagon, but by his sense of direction which gives him a subjective idea of his position relating to the cote.

Practice has, on all points, confirmed our theory. We have had the chance to make some very interesting observations, and we will cite some facts which have a direct reference to our argument.*

*Our experience permits us to settle an interesting point. According to M. Dureste, eggs stirred with a certain violence for a long time do not hatch out. We have found that the rolling on the highway, on the pavement, or in a railway car when the car sets in motion, does not modify in any way the condition of the hatching.

It is just to add that in the movable Pigeon cote the Pigeons brood with the same regularity as their fellows in an ordinary Pigeon cote.

A carriage Pigeon cote is stationed for twenty-four hours at Epernay. Its inmates are not set at liberty, whilst the Pigeons in the neighboring carriages are set free for two hours, then carried farther away for the release. The next day our carriages have all moved near Châlons, with the exception of the one whose Pigeons had not been freed at Epernay. These birds are divided among the other carriages, which are modeled exactly like the first they occupied. At Châlons the cotes are opened and Pigeons are set at liberty. Some of these, which had made the journey from Epernay to Châlons in a strange carriage, set out for Epernay and found their rolling habita-



PIGEON CARS OF THE FRENCH ARMY

Photographed from nature

tion. How did they succeed in reconstituting their itinerary in the inverse sense from Epernay to Châlons and find again their carriage in a situation of which they could not know the surroundings?

The law of inverse scent alone permits this fact to be explained. We have repeated this curious experiment many times.

During the stationing of the cote at the chateau de Morchiès two Pigeons strayed away. We found them again at Bapaume, a preceding lodging place of the Pigeon cote. One was retaken; the other escaped. People sent word to us of his passage in all the localities where his wagon had been stationed. He arrived, in this way, at Houdain. From there he set out for Evreux, resuming the reverse scent of the journey made a few days before in a railway car. At Evreux, where the Pigeon cote had been stationed for many months, we succeeded in capturing him. This itinerary verified, one

may say, step by step, is it not the best proof that we can appeal to to support our theory? Thanks to the Law of Reverse Scent, we can almost always determine the precise point where to find a lost Pigeon. We succeeded in this way in limiting our losses, which would be without it numerous and difficult to repair.

The return of a Pigeon to a lodging which is displaced is not an exceptional fact. We could cite many examples of the same kind taken from the history of birds.

We made at sea some experiments which confirm our theory. The absence of guiding points and the suppression of all local memory rendered the releases made at great distances from the coast very interesting.

On the other hand, observation was easier than on land. It was always possible to note the initial direction taken by the Pigeons leaving the ship.

We left for New York with a number of Pigeons taken from the colombophiles of Normandy. The 25th of March, the day of sailing, we set at liberty ten Pigeons, successively, at distances varying from 100 to 250 kilometers from Havre.

All the Pigeons acted in the same manner; none of them raised their wings to fly high and see afar. They descended almost to the level of the water, turning two or three times about the ship, and took without hesitating the reverse scent of the route we followed. They all reached the Pigeon cote.

The next day, the 26th of March, our steamer stopped to save the crew of a shipwrecked vessel, the *Bothnia*. We sent off, through a howling tempest, seven Pigeons carrying dispatches announcing the event.

Our messengers made useless attempts to take the route from the East, the reverse scent of the ship. Carried away by a violent storm, they fell on some vessels or even took refuge on the coast of Spain. One of them carried his dispatch in the Gulf of Gascogne to the 'Chatterton,' and our message reached its address.

The 31st of August, on the banks of Newfoundland, we sent out a Pigeon which, after much hesitation, flew toward the East. He reappeared at the end of two hours to rest, and then set out again, outstripping the vessel in its course. He arrived at Noroton, in Connecticut, one day before our entrance in the harbor of New York.

This fact shows that the bird, obedient to the sense of distant orientation, has a very precise idea of a direction followed before. After having taken a good initial direction, our bird alters his mind and commits a fault of instinct, but even in this last case he does not wander to the right or the left of the followed route. Thus,

it seems, he can only move himself on the axis of the same route, and there is for him only two solutions, the right and the wrong.

In coming back to France we sent out some American Pigeons, which all took their bearings without hesitation over the wake of the vessel and took up the reverse scent of the route followed.

On nearing Europe we sent out at 900, 600, and 400 kilometers some French Pigeons which had been shut up on board the vessel and kept to be released on the return trip. We noticed that all having the same idea of following the route took their initial direction over the wake of the vessel, flying toward New York. The greater number changed their minds and came back, afterward outstripping the steamer in its homeward voyage. But the losses were greater than in going, reaching the proportion of 20 per cent. These are evidently the Pigeons which, skirting closely the reverse scent of the route followed, went astray in the open sea.

We assert once more that the land does not appear to exercise any attraction for our messengers. Sent out from the Scilly Islands, from the island d'Aurigny, or the peninsulas of Cotentin, they all follow the same direction—east, west—some going in advance of the vessel, others following the reverse scent of its route. The Pigeons rise a little higher than at the time of leaving France; the weather is clearer, but they do not seem to have recourse to the sense of seeing in order to take their bearings. None of them bent his flight over the land in sight.

We have verified by a late experience, very easy to reproduce, that observation through the medium of the five senses amounts to nothing in guiding them back to the Pigeon cote. Five Pigeons under the influence of chloroform are transported from Orleans to Evreux. They do not know this last locality, where we are taking them for the first time. They are watched with great care and when, two days after, they appear to have returned to their normal condition, we set them at liberty and they return as usual.

It seems that the chloroform suppresses the exercise of the five senses, which have during the journey registered no impression, and are mute at the awakening.

The sense of direction, on the contrary, whose action is based on the automatic and mechanical registration of the road followed, continued to work, in spite of the chloroform, absolutely like other mechanical functions—the circulation of the blood, the digestive organs, and respiration—in some way, without the knowledge of the animal.

We have vainly sought for a theory in the works of naturalists which explains in any satisfactory way the acts of orientation accom-

plished by the animal. Many very interesting statements have been made concerning their habits, and their manner of living; but when it is a question of tracing back effect to cause the observer has generally taken a false direction. Wrongfully taking himself as a term of comparison, he asks what he would do in order to accomplish a certain instinctive act occurring among beasts.

It is just in this way that some colombophiles attribute the return of the Pigeon to a wonderful local memory. In his daily recreation the animal flying above the Pigeon cote would note the salient inequalities of the soil, would study their situation, and would use them for guiding points to his dwelling, tracing in this way a veritable triangulation on the country he inhabits. According to others, the animal would base himself on the meteorological record, or else would acquire, in time, a thorough knowledge of the local magnetic currents. Such a hypothesis explains one mysterious fact by other facts still more mysterious. Some have even asserted that the Pigeon takes his direction according to the course of the stars. We think that this theory is fantastic, and must be rejected.

The animal could not be a mathematician, geometrician, electrician, or astronomer. The explanation we advance is more simple.

We have stated that the facts of orientation group themselves under two categories: (1) near orientation and (2) distant orientation. Near orientation is based on observation, employing the five senses—objective organs. It puts in play the memory, the reason, the free will of the animal. It chooses one solution and takes the shortest road for its return.

Distant orientation is based on the functional activity of a *subjective organ* which is situated in the semicircular canals of the ear, and which registers mechanically the road passed over; this sense of direction given to the animal the idea of its position for returning to the points of its departure. The return is governed thus by the Law of Reverse Scent. The animal does not now choose its route; there is but one solution at its disposal—to return by the road which it came.

Orientation over familiar ground, based on observation, memory, reason and, in a certain measure, free will, is an intellectual act; Orientation over unknown and distant land, based on the functional activity of an organ, is an impulsive and irrational act.

The most gifted animals in regard to distant orientation are not, in effect, the most intelligent, but are those which possess the most powerful means of locomotion. Thus it is that birds, infinitely less intelligent than certain quadrupeds, have over the latter an incontestable superiority for distant orientation.

A Pair of Killdeer

BY MRS. HENRY W. NELSON

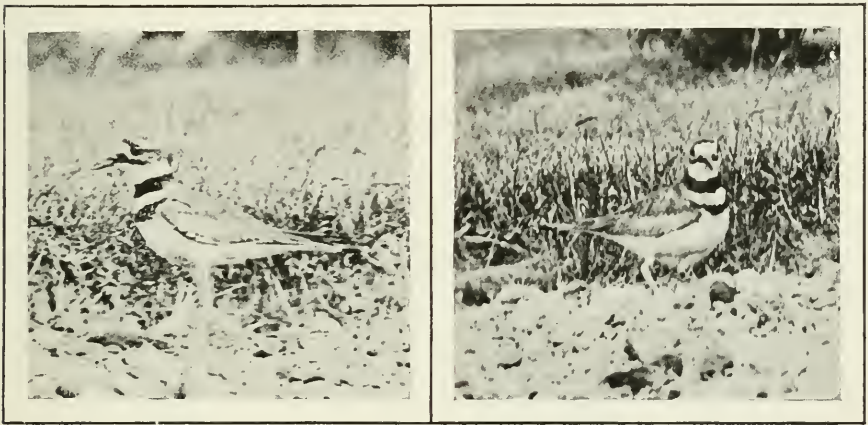


EARLY in June, 1899, I was driving in a park in western New York, when my attention was drawn to a pair of strange birds, who circled round the carriage, sweeping down near the ground and rising again with anxious, distressed cries. They were beautiful birds, strikingly marked, with white foreheads, and rings around the throat—about the size of a light-bodied Pigeon, and with long legs. Presently my eye caught a movement on the ground, and I saw what looked like a little chicken running along at full speed. I was out of the carriage in a moment, and gave chase: the big birds were evidently the parents, and in great anxiety as to my intentions. I easily overtook the little runner, though I had to walk fast to do it, and then down he dropped on the ground, seemingly quite exhausted. I was filled with remorse, for I feared he had been forced to run so fast as to kill him. I gently picked him up, noticed the long legs, the three toes, long, slender bill, and pretty gray and white coloring, and laid him down again, venturing only faintly to hope that the mother's care might revive him. As I retired she came flying up and cuddled down over him, and I left—feeling very brutal. The gardener told me that the little thing had been hatched only three hours before! He had watched the old birds, from the time they had laid their eggs on the bare gravel drive without any pretence of a nest, and had moved them—the eggs—close to the edge of the turf, to prevent their being crushed by passing vehicles. They were Killdeer, a species of plover uncommon in our neighborhood. He said this pair had bred in the park for three years. The park is upland meadow-land newly planted, with no water near, except a tiny brook, dry in the summer. It seemed a strange place to choose, and the utter publicity of the nest, where the eggs might be crushed by every passing wheel, seemed extraordinary.

The next day I was out betimes to see what had been the fate of the young bird, and to my great relief he was running about so fast that I did not attempt to pursue him again, but gave all my attention to the parents, and their ruses and maneuvers were fascinating to watch. Flying so close that I could almost touch her, the mother would throw herself on the ground two or three yards in advance, raise and flutter one wing quite helplessly, crying piteously. As I drew near, away she would fly, only to repeat the performance again and again, until she had fairly lured me to a good safe distance from her offspring, when up she rose and flew far away triumphantly.

When I returned to look for the young bird it had vanished. The coachman had had his eye on him only a moment before, and "he had just sunk into the ground, ma'am!" It required the sharp eye of the gardener, who came up at the moment, to detect the little thing. "There he is," he said, pointing downward; and at my feet, just where I should have trodden had I taken the next step, lay the bird, pressed quite flat into a hollow of the gravel. He had learned his mother's tricks and was playing dead! He allowed us to pick him up and examine him carefully, without a sign of life.

I could not go again to the park until July 3 when, to my delight, the gardener told me the birds were sitting on a second batch of eggs. I should never have found the "nest" if the man had not



KILLDEER
Photographed from nature

marked the spot with a wisp of straw on the turf near by. There were three eggs, laid on the bare gravel, matching it in their dark and light mottlings so as to be almost indistinguishable. The birds were now much bolder than in June, quite determined that I should not come near the eggs if they could frighten me off, and it occurred to me that they certainly came close enough to be photographed. So at 7 o'clock the next morning I was on the spot, accompanied by a friend with her camera—a 4 x 5 "Hawkeye." There was no adjacent tree or screen of any kind, but we easily coaxed one of the birds into coming within 'snapping' range. As we gradually approached, both birds grew quite frantic in their efforts to lure us away, drawing nearer and nearer. When we persistently stayed close, one drew off, but the other evidently made up its mind that no matter what the danger was, those eggs must not be allowed to grow cold. I felt very sorry

and apologetic as it fluttered, played wounded, cried, and yet constantly drew nearer to us and the nest. Finally it lighted on the ground, faced us boldly, made a little run toward the nest, and paused breathlessly—a splendid-looking creature as it stood there, head erect, eyes sparkling, every sense on the alert. The camera snapped! Up it rose but, finding no harm resulting, tried it again and yet again, till it made a final run, posed, and we made a final 'snap,' just as the bird stood over the eggs! We were sitting motionless on the gravel about eight feet from it. I was glad to leave the poor bird in peace after that. Meantime its more faint-hearted mate had never ventured near us. About fifty feet off it had gone on industriously and perfunctorily with its 'play acting,' dragging itself on the ground and crying piteously, but not really risking itself in the least. It was curious that I never once heard the *kill-deer* cry which the books say they give. They uttered a one-syllabled cry only; evidently an alarm note.



YOUNG BRONZED GRACKLE

Photographed from nature by R. W. Hegner, Decorah, Ia.

For Teachers and Students

The Study of Birds—Another Way

BY OLIVE THORNE MILLER



HERE are, of course, as many different ways of studying birds as there are objects to be gained by the study. The systematic ornithologist, the economic ornithologist, the sportsman, the cultivator, has each his own purpose and his own way of becoming familiar with our little brothers. The modern bird-lover, who studies neither for scientific nor economic purposes, but solely to make acquaintance with the tribes of the air, adopts the manner of none of these, but has, within the last few years, evolved a way of his own. It is most commonly by what are called Field Classes, admirably described in the June number of *BIRD-LORE* by Florence Merriam Bailey, who is herself a successful conductor of them.

The way I have evolved from my own experience in acquiring some knowledge of the birds (which I did by myself, without a guide or the help of even a color-key to identification), and later in helping others in the same delightful study, is somewhat different.

To begin with, I regard it as one of the most important uses of the study to lead the student to Nature herself; to acquaint him with the delights to be found in woods and fields, and the benefit to mind and heart, as well as to body, of close friendship with the great Mother. This can be accomplished only by each person alone. In a crowd, even with one companion, however congenial, it is impossible to get into a state of harmony with Nature that shall enable him to feel, with Whittier,

“With mine your solemn spirit blends,
And life no more hath separate ends;”

or, as Aldrich puts it:

“A sudden tremor goes
Into my veins, and makes me kith and kin
To every wild-born thing that thrills and blooms.”

Therefore I insist upon each person who is not satisfied with merely knowing birds by sight and song, but wants really to learn something of their natural lives, and their habits when not disturbed, making his studies in the field entirely alone. I prepare him for the work by an introductory course of instruction in house classes. My

aim is to make him acquainted with the most common birds of the vicinity, taking the families in succession. By means of mounted specimens he makes a study of each species, as to size, form, color, and markings, at the same time receiving some account of manners and habits that shall ensure easy identification in the field. In this way a student learns to know familiarly about one hundred species of the common birds. This gives him a good start for individual work, and prevents the discouragement of facing a world of birds, without knowing one to begin with. I know from my own experience how disheartening this is, and I know, from the experience of others, how many are discouraged in the outset of this most delightful of studies by these preliminary difficulties.

So much has been said about my use of mounted specimens, in the face of my opposition to the killing of birds, that I should like here to define my position. In the first place, I have never objected to the killing of a moderate number of birds for *really* scientific purposes. What I oppose is the destruction for mere collections, for sport, for selling, for the unnecessary multiplication of skins and, above all, for milliners' use. In the second place, no bird was ever killed for me; nor did my purchase of those I have encourage the killing of more, because I bought them of a young man who collected them for himself and then, turning his attention to something else, wished to sell them.

Besides this, the collection I use has had an influence from Maine to Minnesota, interesting hundreds of students in the living bird, and inducing them to discountenance the destruction going on. No person—I may say confidently—ever went out from my classes with a gun, and I have had many boys in them. In fact, it is necessary only to show how much more interesting is the live bird than the poor dead body, to arouse their attention and take away their appetite for destruction. Therefore, even had my specimens been killed for me, I should consider that they had been useful enough, in saving the lives of thousands of their fellows and converting hundreds of boys from bird-murderers to bird-observers, to justify their sacrifice.

Having given my class this general knowledge, with the distinguishing marks of each family, and some acquaintance with its more prominent members, I take them out in small parties for outdoor observation, to teach them and to *show* them *how to observe*. Most useful, also, I regard a practical lesson in the use of the books, identification by the manuals: and another in taking note of and properly describing the points of a bird.

When a student has completed the course of ten talks which I

give a class, he is well grounded in the study. He can readily recognize a few birds, and knows where to look for them; he has learned how to identify and name any others without difficulty; how to make discoveries for himself; and, above all, he has learned the absorbing charm of the study of the individual bird, and the delight of a close acquaintance with nature.

The Bird Course at the Marine Biological Laboratory, Woods Holl, Mass., during the Summer of 1900

BY THOS. H. MONTGOMERY, Jr., Ph. D., Director of the Course



FOR the first time in its history there was started this year at the Marine Biological Laboratory a Nature-Study Course. The objects taken up during the six weeks of the course were cryptogamic and phanerogamic plants, the king crab, insects, and various marine invertebrates, the toad, and birds. It is concerning the bird-study alone that I have been asked to prepare a brief account for BIRD-LORE.

The field work consisted of three mornings spent in the woods and fields near the laboratory, and of one day's trip to the breeding grounds of Terns at Penikese. In this field work, as in that of the laboratory, the director was most ably assisted by Mr. Leon J. Cole and Mr. Herbert Coggins; and in the field the students could be separated into groups, taking slightly different routes. Further, the attempt was made to post the students of each group apart from one another and at favorable places, so that they became, to some extent, independent observers, and could see as many birds as possible with the least possible noise. The noise occasioned by a large party of students walking together through underbrush tends to frighten the birds most effectively, and this difficulty was obviated by the above mentioned method of "posting" the students, while the instructors visited in succession the various "posts." One mistake was made in placing the Bird Course at the beginning of August, when the birds sing but little and are in the low spirits of the moulting period. Another year this course will be placed at the beginning of the season.

As to the laboratory work, one day was spent on the gross anatomy of the Pigeon, and three afternoons on the study of bird-skins. On two of these afternoons the skins were studied for the purpose of identification, on the third for the correspondence of structure with habit. Two entire days were spent on the study of living Pigeons, under the direction of Professor Whitman, the head of the laboratory.

Using as material his splendid collection of living Pigeons, of which he has some forty species, from all parts of the world, Dr. Whitman explained the mode of determining the genesis of different structural characters, illustrating both modes of reasoning and modes of observation.

The lectures were on "Color and Environment" and "Nests and the Influences Governing their Site and Construction," by Mr. F. M. Chapman; on "Migration," by Dr. R. H. Wolcott; on "Moult" and "Geographical Distribution," by Mr. Witmer Stone; on "Maternal Instincts," by Dr. F. H. Herrick; on the "Relation of Structure to Environment," by Mr. Dearborn; and on "Anatomy" and Influences Produced by Food," by the director.

Thus it is seen that this course, as outlined, was essentially different, in being much less elementary, from probably all other bird-study courses of the year throughout the country. The students in it were, for the most part, teachers, and some of them not only experienced teachers but also good field ornithologists; and the aim of the course was to present suggestions as to lines of work, rather than to teach methods or to inculcate facts. From such a course a good student, one open to suggestion, might derive benefit, while one who simply expected to glean a series of facts would probably be disappointed.

One thing needs to be strongly emphasized, namely, that nature-study in the true sense; i. e., accurate and appreciative observation of the behavior of organisms in their natural environment, cannot be taught. The nature-student, that is to say, the naturalist, must be to a great extent self-made and independent in his work. A course in nature-study is, or should be, mainly suggestive, showing principally what are the more important and fruitful lines of work, and how this work is to be carried on; the remainder rests with the student. But there are many teachers who are obliged to teach these subjects, and yet have not the time nor opportunity to learn them sufficiently for themselves: for such, of course, some teaching of facts is essential. In a course for experienced teachers, however, the suggestion should have precedence over the presentation of the fact, and this has been attempted in our course of this year, with what success the students themselves can alone decide.

The Seventeenth Annual Congress of the American Ornithologist's Union will convene in Cambridge, Mass., on November 12, 1900. Public sessions for the presentation and discussion of papers will be held on November 13-15 from 11 to 1 and 2 to 5, doubtless in one of the lecture halls of Harvard University, and to these sessions all persons interested are invited.

For Young Observers

My Experience with a Red-headed Woodpecker

BY ALICK WETMORE (age, 13 years), North Freedom, Wis.



THE first time that I saw the subject of this sketch was on Sunday, October 8, 1899. As I was going along a ravine on that day, I heard a loud, tree-toad-like *ker-r-r-ruck* coming from the top of a tall dead stub. I looked up and soon saw that the owner of the voice was a young Red-headed Woodpecker. His (?) head was a dusky color. He would stick his head around the tree and, after giving the note, dodge back. I thought I would keep a sharp eye on him, and a little while afterward I was rewarded by seeing him get an acorn from a small oak. He seemed to be storing acorns up for winter in holes and crannies.

Once he lit on an oak limb that would not bear him, and it swung until he hung back down, but he got his acorn. While he was flying off, a little Junco seemed to think that he was trespassing and flew at him in a rage and made him get out of the way. I went to a stump nearby and got an acorn and found that it was whole. A few marks on the shell showed where he had hammered it into the crevice. He always seemed to go to the same tree for his acorns.

I laid down on the bank of the ravine close to the tree in the sun to watch him, but he was suspicious and would not come near at first. I was rather surprised to see that he could easily go down a tree backwards, lifting his tail and, after hopping down, falling back onto it. Everywhere he went, he expressed, in vigorous notes, his disgust at having me around.

The stub he liked best was very tall and had a crack in it near the top, and into this crack he hammered, with his shiny white bill, all the acorns that he possibly could. Some of them he cracked in two and then put them in the crack. One fragment he dropped as he lighted. He was after it quick as a flash, and chased it so near the ground that I thought he would dash himself onto it and be killed, but he turned up just before he reached it and flew off without the acorn.

In a cornfield a short distance away I found some nubbins for him. While I was looking for a place to put them up, I found a hole with sixteen acorns in it. He had put them there, for I could see the marks of his bill on them and around the edges of the hole

were a few small dark gray feathers. He had hidden the acorns by putting pieces of bark over them. I then went back to where he was and saw him drinking water, like a chicken, out of the brooklet. After returning from a short walk, I saw him carrying a large piece of bark to put over the acorns that I had uncovered. He started from the base of his stub, but as the bark was nearly as large as he was he could not carry it and was forced to drop it. As it was then nearly dark, I had to go home without learning where he stayed nights, and which, indeed, I never found out.

The next Sunday, the 16th of October, I did not have much time. When I reached the ravine he was catching insects. He was in the top of a tree and would fly out after the insects as they flew by but, growing tired of this, he went to the ground after an acorn. When I went to the hole in which I had found the sixteen acorns before, I now took out forty-five.

Sunday, November 19, I thought I would pay my Red-head a visit. As I did not see him for about fifteen minutes, I thought that some wandering hunter had killed him; but while looking around I heard a welcome *ker-r-r-ruck*, and there he was on his favorite stub. After taking a look at me, he flew down for a drink, with a loud note before he left the stub and shorter ones in between drinks to call attention, and well he might! His somber head had turned red since I had seen him last. The color was a little dark in places, but was fine all the same.

I next saw him on Sunday, November 26. I had gone to my usual place of study and was watching some Pine Siskins when he appeared. He was rather cross, for he chased a Tree Sparrow until it took refuge in a thick, bushy thorn-apple tree. Then he watched until it came out and took after it again. I watched him sunning himself—for it was quite warm—and then went over to the hole in which I had found so many acorns. It was empty, and a number of shells were scattered around the foot of the tree.

From my note-book I see that the date of my next visit was Sunday, December 3. It was cold and snowing quite hard. I put on my overcoat and went down to see him. I may have wanted to see him, but he was evidently afraid of that big black thing in the fence-corner. He scolded and bobbed as though crazy till a pair of Blue Jays lighted in the tree. He was afraid of them and went around to the other side of the trunk and kept still until they left.

On Monday February 12, I saw him last. He was across the river from the ravine in a tree after acorns.

I know that he is still here and alive, and I intend to watch him in the spring when he sets up housekeeping.

Notes from Field and Study

Notes on the American Golden-Eye

The Golden-eye, or Whistler, is one of our most hardy Ducks, living here throughout the winter, sometimes in goodly numbers, passing most of the time feeding and swimming about the air-holes and sitting along the edges of the ice, where they preen their plumage. They resort to one place at night to roost, that is, if swimming about in the water may be called roosting. The Ducks for several miles around congregate at one air-hole. The Whistlers are not alone in roosting here, as they are joined throughout the winter by the American Merganser, and, later, by the Black Duck. When coming in to roost, they fly in low over the water, and against the wind, in flocks of from two to twenty, the time of arrival being from about sundown until dark. When disturbed, they come in later. The Whistler, although capable of seeing well throughout the day, is handicapped by being unable to see well after dark. Rarely in daylight can a man boldly approach within two hundred yards, unless he resorts to strategy, yet at night, by noiselessly approaching in a boat, one may easily get within twenty-five yards.

It is interesting to watch this species during the courting season, which begins here in central New Brunswick late in March and continues throughout April. Should one flock, consisting of males, old and young, and females be swimming about, and observe others approaching on wing or on the water, the adult males, which are really beautiful birds, swim out in advance from each flock and, as they advance, will occasionally throw back the head until the crest rests on the back and the bill pointing about straight upward, utter a note sounding like *z-z-z-ect*. It is a very difficult sound to successfully imitate, but when once heard, and the source

observed, it is not likely to be soon forgotten.

After this introduction, as it were, the members all unite in one flock and proceed to enjoy themselves in Duck fashion. The males also perform these antics after they have chosen a mate, and one may frequently see the male, when alone with the female, throw back his head and give vent to his feelings by uttering this pleasant note, which I have only heard in spring-time.

In May, or early in June, when the female is engaged in incubating her half dozen or more eggs, the male is ever on the lookout for enemies, and is very successful in alluring man from the vicinity of the nest, which is placed generally in a hollow stump, or, it may be, in an old Crow's nest.

Right well does the writer remember one day about the last of May, while walking along the tree-grown shore of an island, being accosted by an adult male, which flew near, making a piteous, whining sound, and alighting just about forty yards away, and so long as I followed in a certain direction all was right, but on returning to the place where he was first seen, he would again return and repeat the performance. After following him for some distance, he took to flight and disappeared.

This species breeds quite abundantly in the northern portion of this province, and the southward flight begins about the first of October.

The adults molt in July and August, and at this time are often quite unable to fly, owing to the loss of a great number of the flight feathers at one time.

These Ducks feed by diving and taking their food, which consists chiefly of small molluscs, from the bottoms of rivers and lakes, staying under water, generally, from one-half a minute to one minute and a half.—WILLIE H. MOORE, *Scotch Lake, N. B.*

A Hummingbird Experiment

Our trumpet-creeper was full of blossoms, and a Hummingbird visited them many times a day, not to their advantage, for when the supply of nectar ran low she would slash the tube of the flower, near the calyx, insert her bill there, and usually the flower would fall when she flew away.

She would sit on a low spray for forty minutes at a time, sometimes preening her feathers, but quite as often merely enjoying life. Then she would make another dash at the flowers and feed with renewed energy.

One day I painted a trumpet-flower in water-colors, on a rather stiff piece of Whatman paper. I painted it as a real flower would look if slit down on one side and spread flat, and I colored both sides. Then I cut out the flower, bent it into shape, and fastened the edges together. Inside the tube I put a small, cylindrical bottle, and tied the flower to the trumpet-creeper in an almost normal position. The little bottle I filled with sugar-and-water, not too thick.

To my delight the Hummingbird visited that flower with no more hesitation than the real ones, and very soon preferred it, and I had to fill up the bottle at least twice a day.

One day I tried holding the flower in my hand, at a little distance from the creeper, and the Hummingbird flew to it as fearlessly as if I were a vine.

I left the painted flower on the trumpet-creeper until a heavy rain washed off most of the color, and then I removed it. There were very small insects in the sugar-and-water, but I am sure that the Hummingbird preferred the latter, for she ate much of it. I am not sure that she ate any of the insects.

The male seldom came to the trumpet-creeper, but once or twice he also fed from the painted flower. Most of his time was spent in slashing off the spurs of the nasturtiums to get at their nectar.

We had hardly one perfect nasturtium flower all summer long, owing to his attacks.—CAROLINE G. SOULE, *Brookline, Mass.*

An Interesting Record

While examining, recently, Audubon's manuscript journals at the home of his grand daughter, Miss Maria R. Audubon, whose volumes 'Audubon and His Journal' alone adequately present the life of the famous ornithologist, I encountered an interesting record which, through Miss Audubon's courtesy, I am permitted to publish

In the latter part of March, 1837, Audubon, with his son John and friend Edward Harris, embarked from New Orleans on the revenue cutter 'Campbell' which had been placed at his service by the United States Government for a cruise along the west gulf coast to gather material for the 'Ornithological Biographies,' three volumes of which had at that time been published

On April 1, they anchored in the Southwest Pass of the Mississippi, and in his journal recording in detail the observations of that day, measurements of specimens collected, etc., there occurs the following interesting entry: "*Fuligula histrionica*. Harlequin Duck.—Saw a pair in perfect plumage. Quite a wonder."

As this species had already been treated by Audubon (Orn. Biog. III, 1835, 612) the fact that he had observed it in Louisiana does not appear to have been mentioned by him in his works, and the record, therefore, is evidently not alone the only known instance of the occurrence of the Harlequin Duck in that State, but in the Southern United States. As the species was apparently more common in Audubon's time than it is now, and bred further South than it does at present, it is not improbable that its distribution in winter was then more extended.—FRANK M. CHAPMAN, *American Museum of Natural History, New York City.*

Book News and Reviews

A REVIEW OF ECONOMIC ORNITHOLOGY IN THE UNITED STATES. By T. S. PALMER, Assistant Chief of Biological Survey. Reprint from Yearbook of Department of Agriculture For 1899. Pages 259-292, 3 Pl. 1 Fig.

After tracing, in the development of the Science of Ornithology in America, the beginnings and growth of the study of the economic value of birds, which lead to the establishment of the Division of Economic Ornithology and Mammalogy (now the Biological Survey) in the United States Department of Agriculture, Dr. Palmer reviews the work of this Division and then presents a broad general survey of the commercial value of birds to man. The use of birds and their eggs for food, the employment of their feathers for decorative purposes, and the gathering of bird-guano are here discussed in the light of numerous statistics of the utmost interest and importance.

Having thus reviewed the strictly economic status of birds, Dr. Palmer considers their destruction under bounty laws, their preservation under protective laws, and also the introduction of foreign birds.

It is impossible to go into details, but we may briefly say that no general paper known to us so clearly defines the bird's economic standing. It abounds in facts and figures and should be in the possession of every bird-student and especially of these advocates of bird-protection who would base their arguments on sound, logical ground.—F. M. C.

ABSTRACT OF THE PROCEEDINGS OF THE DELAWARE VALLEY ORNITHOLOGICAL CLUB OF PHILADELPHIA. No. III, 1898-1899. Published by the Club.

The Delaware Valley Ornithological Club meets at the Academy of Natural Sciences, in Philadelphia, on the first and third Thursdays of each month from October to May, inclusive. The average attendance during the two years covered by this report is shown by it to be about 20,

and the character of the papers and notes presented, with the discussion thereof, prove the club to be a thoroughly active organization, doubtless the most active local bird club in this country.

In addition to abstracts of the reports of meetings, this publication contains the following papers presented in full: 'Birds of the Blizzard of 1899,' 'Migration Data on City Hall Tower' by William L. Baily, wherein are given the data connected with the 527 birds of 56 species which were killed by striking the tower from August 27, 1899 to October 31, 1899, and the 'Summer Birds of the Higher Parts of Sullivan and Wyoming Counties, Pa.' compiled by Witmer Stone, an extremely interesting list of 98 species of which no less than 13 are representative of the Canadian fauna.—F. M. C.

CHECK LIST OF THE BIRDS OF ONTARIO AND CATALOGUE OF BIRDS IN THE BIOLOGICAL SECTION OF THE MUSEUM, DEPARTMENT OF EDUCATION, TORONTO. By C. W. NASH. 8vo, pages 58.

The author lists 302 species and subspecies of which all but nine are represented in the museum of the Department of Education. The annotations are good as far as they go but, to our mind, seem too brief for the large area covered, and the addition of definite records of migration from several points in the Province would add greatly to the value of the list for students.—F. M. C.

CHECK LIST OF NEW YORK BIRDS. By MARCUS S. FARR. Bulletin of the New York State Museum, No. 33. Vol. 7. April, 1900. 8vo. Pages 409. 25 cents.

This is a nominal list of the birds which have been recorded from New York State, 380 in number, published in advance of a more detailed work, as a convenient check-list for students. For this purpose it is printed on only one side the page, blank pages being left for the entry of notes. This plan of preliminary publi-

cation is an excellent one, and should bring to Mr. Farr a large amount of additional information, making his final work proportionately valuable.—F. M. C

Book News

Houghton, Mifflin & Co. have brought out a school edition of Mrs. Miller's admirable 'The First Book of Birds' (reviewed in *BIRD-LORE*, Vol. 1, p. 167), which is sold at the low price of 60 cents. This book, it seems to us, should exactly fill the wants of the kindergarten and primary teacher.

For a surprisingly frank confession of its author's pleasure, if not in the killing at least in the hitting of birds, we refer our readers to Mr. Maurice Thompson's 'In the Woods with the Bow,' published in 'The Century' for August last. For no other reason, apparently, than that they furnished a desirable target, such species as the Blue Grosbeak, Sparrow Hawk, Raven, Least Bittern, and others became marks for his skill. At one time, however, his enthusiasm as an archer evidently carried him beyond his own wide bounds and, on the departure of a companion, he wrote "I felt free to turn myself loose and make a fine stir in Arcadia. The wildest shooting mood was upon me, and what-ever moved became a target for my shafts. I am afraid to make a full record of an hour's business."

We commend Mr. Thompson to the game wardens of the state in which he 'turned himself loose.'

If we may judge by a number of alleged photographs of birds "from nature," published recently in various magazines, their makers have adopted the eminently practical, if scarcely praiseworthy method, of placing a mounted bird among natural surroundings, where its picture might be made at leisure. Such photographs are surely "from nature"—far from it.

Readers of Mr. Richard Kearton's valuable works 'With Nature and a Camera' and 'Wild Life at Home' will be interested to learn that their author proposes

to visit this country in October to remain several months on a lecture tour.

The September number of 'The Millinery Trade Review' protests against the appointment of naturalists as inspectors of animals and birds in connection with the enforcement of section 2 of the Lacey bill on the ground that as "zealots in their opposition to the wearing of bird-plumage, they are incompetent to serve in such capacity, as they are more than likely to be swerved by their prejudices. Nor are they competent to distinguish between natural and made-feather novelties after leaving the foreign factories."

It is unfortunate that the inspectors appointed will not have an opportunity to confound the milliners with a display of ornithological knowledge but, as a matter of fact, the section of the Lacey bill referred to, relates to living birds and not to their plumage.

The American Museum of Natural History now publishes a popular monthly magazine, entitled 'The American Museum Journal,' which is designed to keep the public informed of the progress of the Museum as shown both by exhibits and publications. It may be obtained from Dr. Anthony Woodward, Librarian of the Museum, for ten cents a copy.

The notices of Professor Jones' 'Warblers' Songs' and Mr. Burns' 'Monograph on the Flicker,' published in *BIRD-LORE* for August, have brought us numerous inquiries in regard to the Wilson bulletin, in which they appeared. This excellent publication is issued quarterly at Oberlin, Ohio, under the editorship of Prof. Lynds Jones, from whom information in regard to subscriptions, back numbers, etc., may be obtained.

Houghton, Mifflin & Co., announce for early publication 'The Woodpeckers' by Fanny Hardy Eckstorm. Doubtless the day is not distant when we shall have special monographs treating at greater length than is possible in a general work, each family of North American birds.

Bird-Lore

A Bi-monthly Magazine

Devoted to the Study and Protection of Birds

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

Published by THE MACMILLAN COMPANY

Vol. II OCTOBER, 1900 No. 5

SUBSCRIPTION RATES.

Price in the United States, Canada, and Mexico, twenty cents a number, one dollar a year, postage paid.

Subscriptions may be sent to the Publishers, at Harrisburg, Pennsylvania, or 66 Fifth avenue, New York City.

Price in all countries in the International Postal Union, twenty-five cents a number, one dollar and a quarter a year, postage paid. Foreign agents, MACMILLAN AND COMPANY, LTD., London.

COPYRIGHTED, 1900, BY FRANK M. CHAPMAN.

Bird-Lore's Motto:

A Bird in the Bush is Worth Two in the Hand.

The A. O. U. and the Audubon Societies

The proposal to hold a conference of representatives of the Audubon societies in Cambridge during the Seventeenth Annual Congress of the American Ornithologists' Union, which convenes in that city on November 12, 1900, is admirable, not alone through its promise of the accomplishment of practical and desirable results in matters concerning the work of the Audubon societies, but also because it will emphasize the close relation which exists between the societies and the Union. With the more isolated members of both organizations it is evident that this affiliation is not suspected; indeed, the Audubonist whose aims are limited to regulating the millinery of her neighbor finds, to put it mildly, nothing to commend in the most legitimate efforts of the ornithologist who, with equally narrow vision, is oftentimes led to make his critic stand as a type for the societies she so misrepresents.

An associate member of the Union, living in California, voices this prejudice in a recent number of 'The Condor,' wherein

he "registers a kick against being placed in the same class [of A. O. U. membership] with Audubonists and fad protectionists." His definition of the objectionable Audubonist as a woman who "declines to wear mangled bird-remains on her hat or as trimming for her clothing," very clearly exposes his ignorance of the scope of the work of the Audubon societies, an ignorance which we have found to prevail most widely in regions where the Audubon societies are least active.

Doubtless there are "fad protectionists" in the ranks of the Audubon societies, just as there are fad collectors of birds' skins and eggs among the members of the Union; but fortunately both are of too little importance to affect the harmony born of common interests which does exist between the Audubon societies and the A. O. U.

The original Audubon society was organized by the Union, and at the present time the presidents of three of the leading societies are prominent members of the A. O. U., while but few of the larger societies are without representatives of the Union on their executive boards who, be it added, are not mere figure-heads, but active workers. As further evidence of the community of interests of the two organizations, it may be said that the Union's Committee on the Protection of North American Birds is, in effect, an Audubon Society.

It is not alone the necessity for bird-protection which prompts these members of the A. O. U. to join forces with the Audubon societies, but because they recognize the enormous influence which these societies can and do exert on the advance of ornithological interests in this country. Indeed, we assert without hesitation that the Audubon societies, with their 40,000 or more members, popular lecture courses, circulating libraries, school bird-charts, and many educational schemes, are a more potent force in shaping the future of American ornithology than the American Ornithologists' Union itself; and this not because their members decline "to wear mangled bird-remains," but because they

realize the incalculable importance of education, and are making every effort to secure for the youth of this country opportunities to learn something of the beauty and value of bird-life which the previous generation lacked.

We would make no comparison between the Audubon Societies and the Union which would in any way reflect on the work of either. Both have their place, and when their relations are properly understood it will be seen that they stand to each other as preparatory school to college. It is the province of the Audubon societies to arouse interest in the study of birds, in short, to make ornithologists; it is the province of the A. O. U. to enroll them in its membership after the school-day period has passed, and sustain their interest through the stimulation which comes from association with others having kindred tastes.

The ornithologist who counts success through the number of his 'takes' and 'finds' should understand that we are reaching a stage in the study of North American birds where the field-glass is of more importance than the gun, where observations are more needed than collections. It is this doctrine which members of the A. O. U. themselves are trying to inculcate in the minds of budding ornithologists (witness their circular issued by the Pennsylvania Audubon Society and published in *BIRD-LORE* for August, 1899), and to close the ranks of the Union to what, in effect, are their own pupils, would be obviously too inconsistent to be worthy of a moment's consideration.

Robbed of its misconception of the aims of the Audubonists, and we confess to a certain sympathy with the plea of the writer of the letter we have quoted from for an additional class of members in the A. O. U. The suggestion to increase the limit of active membership from fifty to sixty or seventy-five, put forth by another correspondent of 'The Condor' seems to us to be unwarranted

by existing conditions. The writer mentioned thinks that California should be better represented on the active list, but we find that it already possesses four active members, or more than any other state except Massachusetts and New York and the District of Columbia. However, he admits that among the ninety members of the Cooper Ornithological Club of California there are only "two, possibly three, who would fill the requirements" demanded of candidates for active membership. To this number average current opinion would add probably four or five candidates from the East, making a total number of eight possible claimants for the four vacancies in the active list, certainly not a too severe competition for "the highest honor to which any American Ornithologist, can aspire."

The proposal to make two classes of associate members, on the contrary, has much in its favor. When the Union was organized there was far less interest in the study of birds than at present, and the list of associate members was largely composed of amateur ornithologists, any one of whom might eventually become a candidate for active membership. But with the greatly increased popularity of ornithology there has arisen a class of students who, while they do not aspire to the rank of active membership, are still desirous of being connected with the Union, and between them and the associates, whose ambition it is to become active members, a distinction might, with perfect justice, be made by the creation of a class of senior associates limited to one hundred in number.

But, in any event, let us regard with equal fairness the technical ornithologist absorbed in his minute study of specimens and his disentanglements of nomenclature snarls, and the ardent bird-protectionist who perhaps can not name a dozen birds correctly. Both are sincere, both are necessary, and a mutual understanding of each other's aims will, we are sure, lead to mutual respect.

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 (President of the Audubon Society of the State of Connecticut), Fairfield, Conn., to whom all communications relating to the work of the Audubon and other Bird-Protective Societies should be addressed. Reports, etc., designed for this department should be sent at least one month prior to the date of publication.

Notes

The ever-important question of how to retain the interest of those already banded together by membership in the Audubon Societies is still before us, and seemingly as far from being settled as ever. As yet there has been no general meeting of workers in this branch of bird-protection, no interchange of personally related experience. I am glad to be able to state definitely that the long-talked-of conference is to be held this fall, and I urge as large a response as possible to the hospitable invitation of the Audubon Society of the state of Massachusetts.

It is quite fitting that this Society should be the first to act as host, as it has been the pioneer of all that is best in the work—at once progressive and conservative.

Some time ago Professor M. A. Willcox made the suggestion that a 'White-List' of milliners be obtained, if possible, in every city and large town; this list to be composed of the names of those who would be willing to keep on hand some tasteful hats and bonnets from which all but Ostrich plumes should be absent or, in short, to make it easy for customers to obtain 'Audubonnets' if they so desire.

This is a praiseworthy experiment, and I should like every secretary to endeavor to send a list of names by November 1. Personally, I think it is handling the matter by the wrong end. Women should refrain from demanding feathers rather than throw the responsibility upon the milliner, who *must* keep well in the front with novelties in the push of trade-rivalry or go to the wail.

Why should we expect the milliner

with a living at stake to be more moral than the woman who has sufficient means to buy her headgear ready made?

One milliner writes: "I am in sympathy with the Audubon movement, and I think it is a great pity that the dear little birds should be sacrificed for millinery trimming, but as long as my patrons demand them I feel it right to use them. Stop the demand, and the milliners and dealers will soon forget about them. * * * It is my plan to have a great many hats and bonnets without the plumage of wild birds, and if I could get sufficient support from members of the society, I would do away with them altogether."

This, from a well-known Boston milliner, drives the nail home, and is a clear expression of the sentiments of the majority of the intelligent trade.

I wish to call particular attention to Bird-chart No. II, issued by the Massachusetts Society. It is fully the equal of No. I, and the two, picturing as they do fifty-two of our common birds, with accompanying descriptive text by Ralph Hoffmann, are a practical answer to the daily question, "How can I instruct my children about the birds? We do not live near a museum."

The Rhode Island Society has issued a very striking poster printed on heavy card, bearing a picture of a Tern, and urging women to refrain from wearing the plumage of both Gulls and Terns. Copies may be purchased from the secretary.

The schools are again in session, and the season for teaching via the book opens as the season of observation for the many draws to a close. This is the time that

the circulating libraries of natural history should be sent upon their journeys to the remote school-districts to bring a breath of hope and summer to those of whom winter makes 'shut-ins.' These libraries should not be wholly about birds, but comprise books on other native animals and plants as well, the better to show the interdependence of all nature.—M. O. W.

The Audubon Conference

Following the suggestion given in BIRD-LORE of a recent date that a conference of Audubon Societies be held in Cambridge, Mass., in connection with the meeting of the A. O. U. November 12-14, the Massachusetts Audubon Society announces that it has sent invitations to the secretaries of the various state societies asking them to send delegates to such a conference. The rapid increase in the number of Audubon Societies, and the many methods of working for bird-protection which have been in use by them, suggest that a comparison of these methods, and a mutual interchange of opinions on this subject would be of benefit to all. There are now twenty-two of these societies and it is earnestly desired that each will send at least three delegates to this conference. The Massachusetts Audubon Society will cordially welcome the delegates, and will make arrangements for their convenience and comfort; they also herewith extend an earnest invitation to all Audubon members and bird-lovers to attend this meeting. The committee are perfecting arrangements to make this first convention of Audubon Societies a pleasant and profitable occasion, when "members may meet face to face and feel the fellowship that comes from the spoken word."

For details of the conference and suggestions regarding the programme, address Harriet E. Richards, Secretary, care of Boston Society of Natural History.

The Milliners' 'White-List'

We have received the following names of milliners who are willing to make a

specialty of bonnets trimmed without wild birds' feathers:

BOSTON, MASS.—R. H. Sterns & Co., Cor. Temple Place and Tremont St.; Caroline, 486 Boylston St; Céleste, 415 Boylston St.

WORCESTER, MASS.—Edith A. Cushing, 1 Chatham St.; Mrs. Harriet A. Green, 19 High St.; Mrs. Ida S. Richards, 165 Pleasant St.

MILLBURY, MASS.—Mrs. J. M. Cushing-Johnson, 271 Main St.

Reports of Societies

RHODE ISLAND SOCIETY

The Audubon Society, in conjunction with the Game Association of this state, succeeded last year in securing the passage of a law creating a Bird Commission of five members, authorized to enforce the statutes relating to birds. This year, through the instrumentality of the same societies, and with the help of the Bird Commissioners, the Rhode Island bird laws have been greatly improved and now compare favorably with those of any state. The close season for game birds has been lengthened, and all other birds are protected during the entire year, with the exception of English Sparrow, Hawks, Owls, Crows, and Crow Blackbirds, which "may be killed at any time by any person upon his own land." This last clause was a necessary concession to the views of some of the rural legislators, and we can only hope that in the near future it will be amended.

One section of the law imposed a fine of \$20 for every Woodcock, Quail, or Ruffed Grouse sent out of the state. The same penalty is imposed for disturbing or destroying the nest or eggs of any wild bird without a license from some scientific institution.

In order to give publicity to the new laws, the Audubon Society has had abstracts of the same printed upon cloth and posted throughout the state.

As a novel method of appealing to the public, this Society has recently made

use of an advertising card in the street cars. One half the cards is devoted to a beautiful half-tone picture of a Wilson's Tern, and the other half to an appeal to all "Fair-minded Women."

It is hoped that other societies will make use of these cards, which are suitable for posting in any public place, and which may be obtained from the undersigned at cost.

In order to encourage the study of birds in the school, four prizes of cameras and opera glasses were recently offered by the Audubon Society and the Humane Education Committee of the S. P. C. A. for the best essay upon various subjects relating to birds. The graduating classes in the fifteen grammar schools of Providence were selected by the superintendent of schools, Dr. H. S. Tarbell, for the competition. A month of preparation was allowed, but the subjects were not given out until the hour appointed for writing the essay.

About 150 of the best papers were sent to a committee of this Society, who examined them and awarded the prizes. The work done by the pupils showed an amount of interest that was surprising and encouraging, and the Committee decided to make honorable mention of ten papers for which they awarded subscriptions to a monthly magazine issued by one of the Humane Societies.

The officers of the Audubon Society feel that a busy season has resulted in a distinct advance for the cause of the birds.

ANNIE M. GRANT, *Secretary*.

CONNECTICUT SOCIETY

The Annual Report of the Audubon Society of the State of Connecticut has been issued in pamphlet form, and will be sent to the officers of other societies upon application to the secretary. This society is in a flourishing condition, the special feature of the past year, in addition to the free illustrated lectures, being the purchase of 10 Natural History libraries of 10 books each to be circulated in the public schools through the kind co-

operation of Mr. C. D. Hine, secretary of the State Board of Education.

The following letter is a part of that sent out with each library:

Dear Madam:

You will receive by express an Audubon Library. These books deal with natural history and particularly with birds, the object being to encourage the reading of all good books and especially to arouse interest in the nature and habits of common birds and the benefits which these birds render. The Audubon Society will be glad to receive reports from the teachers, giving an account of the use of the books, stating which are the most popular and entertaining, in general the effect of such a library in school. The library may be kept until the end of the term. It comes to you free of expense, and when returned the express will be paid at this end.

Yours truly,

CONNECTICUT BOARD OF EDUCATION.

All of the libraries have been placed with the public-school teachers and several have written to show their appreciation and enjoyment of the books. We consider this work one of the most important we have accomplished, and hope to extend it considerably during the coming year, as there is already a demand for more books.

To give greater identity each library bears the name of the American naturalist whose books are most prominent in it, or a title otherwise indicative of its contents. The Ernest Seton-Thompson Library, The John Burroughs Library, The Olive Thorne Miller Library, The Teachers' Library, The Gardencraft Library, etc.

The Lecture Committee reports as follows:

"Last summer the two lectures illustrated by slides which the Audubon Society had circulated during the previous year were re-used, and to the Farmers' Lecture a number of new slides were added. Also a new lecture was written and slides prepared by Mrs. Wright, the president of the society. This lecture was intended for little children, the subject being 'The

Adventures of a Robin.' During the fall months there was some demand for the lectures, but with spring came more applications, and from then till now they have been in almost constant use. The committee has made an effort to have the Farmers' Lecture used in the granges throughout the state, and though a number have had them, still not so many as the number of granges would warrant. The schools have responded largely to notices sent to them in regard to the lectures, and for Bird and Arbor Day there were twenty applications for them. Lecture No. II, 'Birds about Home,' has been used fifty-two times, while the Farmer's Lecture has been used fifteen times, and Lecture No. III sixteen times, making in all eighty-three times. Success has been obtained by a local secretary keeping a lecture a number of weeks, and taking it to the different schools in the neighborhood. The children were much interested, and a number joined the society as a result. A number of most appreciative letters have been received, and there seems no doubt that the lectures have done great good in arousing interest in the cause for which the Audubon Society is working—the protection of birds."

The Audubon Societies at the General Federation of Women's Clubs

Through the enterprise of the Wisconsin Society, Miss Mira Lloyd Dock was secured to speak upon Bird-Protection June 8, at the General Federation of Women's Clubs then in session in Milwaukee. Miss Dock took 'The Quality of Mercy' as her text, and through it appealed to a representative audience of women from every part of the country. She handled the subject in a way that showed a thoroughly trained and logical mind. The work of the Audubon Societies was presented not as an isolated affair, not as a fad, but in its relation to all the other movements of the age that

make for righteousness, in the way of lessening the amount of suffering among men and animals.

A leaflet containing a list of the Societies for Bird-Protection at home and abroad, and various notes of interest was distributed at the meeting, which cannot fail of doing widespread good. The State Societies contributing toward the expenses of this lecture were New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, Illinois, Wisconsin and Ohio.

A Welcome Superstition

Mr. Ernest Seton-Thompson writes us from abroad of a growing superstition in Paris against the wearing of 'aigrettes,' which, with characteristic originality, he voices in rhyme, as follows:

The Dames of France no longer wear
The plumes they used to prize:
They find that Aigrettes in the hair
Brings crows' feet in the eyes.

E. S-T.

A Remarkable Bonnet

The observing ornithologist nowadays often make interesting discoveries in the befeathered monstrosities with which some women no doubt imagine themselves becomingly adorned; but of the many which have claimed our attention, in none perhaps was the plumage of different birds so confusingly intermingled as in a hat seen not long since on an Eighth Avenue, New York City, car.

It contained a Black-cock's tail, Dove's and Whip-poor-will's wings, Grebe's breast, Paradise Bird's plumes, a bunch of Aigrettes, and a Hummingbird!—
F. M. C.

Death of Miss Seixas.

We regret to announce the death of Miss Cecile Seixas, secretary of the Texas Audubon Society, who, with her mother and two sisters, perished in the Galveston hurricane.



FERRUGINOUS ROUGH-LEGGED HAWK
Photographed from life by H. W. Nash, Pueblo, Colo.

Bird = Lore

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

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. II

DECEMBER, 1900

No. 6

Photographing Ptarmigan

BY E. R. WARREN, Crested Butte, Colo.

With photographs from nature by the author*



OUR White-tailed Ptarmigan, or 'Mountain Quail,' as it is commonly called in this state, is a bird of such alpine habitat that but few become acquainted with it, especially in the summer season, when it lives at timber-line and higher. In the winter it is somewhat better known, for it then descends to the valleys, driven down by the storms and deep snows, although, as far as I know, never below or out of the snow. At this time they are very noticeable, that is, if one runs across them, for they are pure white, excepting bills and eyes, which are black. At all seasons, so far as I have observed, unless much persecuted, they are fearless of man, and will allow one to approach very closely, so closely that I have actually touched them.

The photographs from which the accompanying illustrations were made were taken in the vicinity of Crested Butte, Gunnison county, Colorado. The first of the birds in the summer plumage was taken in 1899 at an elevation of over 11,000 feet, nearly but not quite timber-line, and in one of our high mountain basins. The birds were in the habit of coming daily, at about noon, to a mining tunnel, for the sake of drinking from a small stream of water which flowed from the tunnel, probably the nearest water they could find. As long as there is snow on the mountains the birds do not go for water. I have seen them eat snow in the summer as well as in winter. There

*Mr. Warren's beautiful pictures illustrate perhaps more forcibly than any photographs BIRD-LORE has published the educational value of the camera in the study of birds in nature. Few ornithologists are privileged to see Ptarmigan in their haunts, and, with the exception of the Scottish species, they are never, we believe, confined in zoölogical gardens. But here we have a series of photographs, which not only gives an excellent idea of the appearance of these birds in life, but graphically demonstrates the importance of their marked seasonal changes in plumage, which are technically described by Dr. Dwight in the succeeding article.

were old and young birds; on my first trip I found a hen with two young, and on my second a hen with four young, and another hen with one chicken appeared soon after. The latter, I think, were those seen the first trip, but one had been killed by something, very likely a Red-tailed Hawk I saw flying about. This Hawk was the cause of the picture called "Watching the Hawk," taken the first trip. These two young birds were very tame, and after being followed about some time had settled down among the grass and stones on the hillside. I had put the camera down about four feet away



Copyright, by E. R. Warren

"WATCHING THE HAWK"

from them, and had the stop at sixty-four and shutter for one-half second exposure. The old bird was about twenty feet away. The chicks were in a nice position, the slide was out of the plate-holder, and I was just at the point of squeezing the bulb to make the exposure. The hen began clucking very excitedly as if alarmed, and those youngsters flattened themselves out among the rocks and grass so that, close as I was to them, I could hardly distinguish them from their surroundings. As for taking their pictures then, it would have been impossible. The camera would have shot over them. I looked to see the cause of the trouble and saw the Hawk sailing along close to the ground. After he had passed, the birds raised themselves up



Copyright, by E. R. Warren

PTARMIGAN IN NOVEMBER JUST AFTER COMPLETING WINTER PLUMAGE

The conspicuousness of these birds in white winter plumage when seen against a dark background is an eloquent argument for the necessity of their seasonal changes in plumage, the value of which is strikingly illustrated by the photographs on the preceding page and below, where birds in summer and winter plumages respectively are shown with appropriate seasonal surroundings.



Copyright, by E. R. Warren

PTARMIGAN IN WINTER PLUMAGE

and stretched out their necks, looking after him—then I took the picture.

After quenching their thirst at the tunnel the birds would start up the hill, feeding as they went and acting much like a flock of domestic fowls. They fed on grass and weed seeds, with an occasional fly or other insect, which the young would often chase.

The picture of the two birds in winter plumage was taken in November, 1899, near the summit of Mt. Emmons, just across from Redwell Basin, where I made my summer pictures. A heavy snow had fallen in October, but after that the weather had settled and



Copyright, by E. R. Warren

PTARMIGAN IN SPRING CHANGING TO SUMMER PLUMAGE

melted the snow so that it was not bad traveling: in fact, even to the very top of the mountain there were bare spots. Here I found these two Ptarmigan, young birds, I think, as they did not appear to be quite full grown, and possibly some of those I had photographed two months before. Like the others they were tame, and I could get as close as I wished to them, the bare ground giving a contrasting background for their white winter plumage. The picture of the bird in winter plumage, on the snow, with part of a man on skis near by, was taken in the valley of East River, about four miles east of Crested Butte, in March, 1900. Here, among the willows in the river bottom, were quite a good many Ptarmigan, some of which were quite shy. Snowshoes, ten-foot Norwegians, or skis, were a

necessity here, for the snow was three to five feet deep and there were no roads or trails. The birds appeared to be feeding on the willow buds. Judging from the tracks we saw, they must be much harassed by coyotes, for we observed the latter's tracks running in every direction from one willow clump to another, as if beating the ground for game.

In May, 1900, I was camped on the south slope of Mt. Emmons, working a mining claim. The snow still lay on the higher slopes, but in the morning would be hard so that one could easily walk on it. One morning I walked up toward the summit, near where I secured the winter plumage pictures, and found one bird, in the changing plumage. Its head and neck were thickly spotted with black and brown, while there were numerous brown feathers in the back. Below it was still white. As usual, it was tame and I could observe it closely. Where I found it the ground was partly bare and partly covered with snow. On the bare spots it found grass and was nipping off the heads of this, and also would pick industriously at times into bunches of moss, getting the seeds from them.

On July 11, I had my greatest piece of luck. I had gone out to look for Ptarmigan, hoping to find a nest with eggs, and was coming back along the crest of a ridge when I saw a little chick running a few feet in front of me, and, looking down, I saw the old bird and more chicks almost beside me. There were five young altogether, apparently only a few days old, as they were downy, and the quills in the wings were only just beginning to show. With this family I had a most interesting time. It was no trouble to get pictures of the old bird, for she would stand still and allow me to put the camera down on the ground two or three feet away,

use the focusing cloth and focus, then change the shutter from time to instantaneous exposures, put in the plate-holder and make the exposures. I secured pictures of her thus when she was covering her whole family, for whenever she stopped the chicks would nestle beneath her,



Copyright, by E. R. Warren

ADULT FEMALE PTARMIGAN IN SUMMER PLUMAGE

when I might have captured the whole family by putting my hat over them. But they were most independent little fellows and, chirping, would run about wherever they pleased. It was wonderful to see them run over the rough, rocky ground where I found them. This was at an elevation of about 12,000 feet and on a ridge the north side of which breaks off very abruptly, in many places in perpendicular cliffs. Once I saw a young one fall fully seven feet down among the rocks, rolling over and over. It did not seem to be at all hurt or frightened. When it stopped falling it at once started back up the hill and in a minute or two was with its mother; she had seen the fall, but had manifested no alarm. The birds were feeding on the seeds of such grass and plants as grow at that altitude, a species of moss being, seemingly, an especial favorite with them.

Finally, placing the camera where I had to lie down at full length to focus, and where, if I had rolled to the left a little ways, I would have fallen a hundred feet or more down the mountain, I put in the plate-holder, drew the slide, then, by threatening the bird, holding my hand over her head, I induced her to rise; the youngsters came out from under, and, watching the right time, I caught two of them in a picture.



Copyright, by E. R. Warren

FEMALE PTARMIGAN AND CHICKS

How Ptarmigans Molt*

BY JONATHAN DWIGHT, Jr., M. D.



THESE widely distributed, circumpolar birds are a pleasing illustration of the principle of protective coloration, even their method of molt varying so from that of the other Grouse as to adapt their plumages more perfectly to their surroundings. In winter we find them in snow-white dress, the Willow and Rock Ptarmigans (*Lagopus lagopus* and *Lagopus rupestris*) and their allies having jet-black tails which are nearly concealed by the white coverts (Fig. *c*). The White-tailed Ptarmigan (*Lagopus leucurus*), peculiar to the alpine tops of the Rocky Mountains, is absolutely white. During the long Arctic winter the birds so blend with their snowy environment as to be well-nigh invisible to their enemies, but with the coming of the brief summer their white dress is no longer protective, as they wander over the brown vegetation or gray rocks laid bare by the sun. Now they must sit upon their eggs day after day in some warm spot and presently care for their brood in latitudes where often in mid-summer snow-drifts alternate with flowers. And so it is that a pre-nuptial molt quickly covers the upper parts of their bodies and their breasts with brownish or dusky mottled feathers that hide the white wings and abdomen (Fig. *a*). This molt occurs, usually in May, with the melting of the snow, which takes place earlier or later according to latitude.

After the duties of incubation are over, early in July, the postnuptial molt, common to all species of birds, begins and it is completed in about six weeks. The white wings and black tails (white in *L. leucurus*) are renewed and nearly all of the lower surface becomes white, while upon the head, breast and back reddish or dusky feathers appear, with mottling which is less bold than the nuptial and often reduced to a mere sprinkling of darker color. Females, previously distinguishable by coarser mottling, also don this dress, the preliminary winter plumage. A supplementary postnuptial molt now follows so quickly that one molt is often not completed before the other begins. The latter is partial, but it involves those areas upon which dark feathers have grown, they being now replaced by white ones. The overlapping of the molts is shown by Fig. *b*, where feathers of three stages of plumage may be seen, the parti-colored effect being due chiefly to the outbreak of molt at various definite points from which new feather growth, as in other species, regularly radiates along definite paths.

The purpose of the preliminary plumage, apparently, is to tide the birds over the autumn or, rather, the brief period that in Arctic regions

*See also an important paper on this subject by Dr. Dwight in 'The Auk' for April, 1900.

corresponds to it. The transition to winter dress is less rapid, however, than the abrupt change from winter to summer, and the parti-colored plumage is most protective when the face of the country is partly brown and partly powdered white by the snow-squalls that herald the approach of winter.

We have now followed the adult Ptarmigans in their molts throughout the year, and will find that they differ from other members of the



SEASONAL PLUMAGES OF PTARMIGAN
 From specimens in the American Museum of Natural History.
a, summer. *b*, postnuptial or autumn. *c*, winter.

Grouse family only in their more extensive prenuptial molt and in their peculiar supplementary postnuptial molt. Let us now see what happens to the young birds. The chicks hatching in July or earlier are thickly covered with down. The juvenal plumage which follows the down is not unlike the nuptial dress of the adults, but the wing quills (except the two outer primaries, which are white) and the tail are

gray. Shortly, a complete postjuvenile molt occurs and a preliminary winter plumage is assumed, which is nearly identical with that of the adults. From this stage on, the sequence of molts and plumages is the same in adults and young birds, both assuming white plumages in winter and mottled brown ones in summer, followed by the intermediate reddish stage, which is grayish or dusky in some species.

The minor details of the three molts of adults and of the two peculiar to young birds are extremely interesting, but space forbids our going deeper into them. Enough, however, has been said to show not only how the Ptarmigans molt, but why they molt. The plumage changes seem to be necessitated by the conditions under which they live.

Winter Pensioners

BY BRADFORD TORREY

With photographs from nature

OUR northern winter is a lean time, ornithologically, though it brings us some choice birds of its own, and is not without many alleviations. When the Redpolls come in crowds and the White-winged Crossbills in good numbers, both of which things happened last year, the world is not half so bad with us as it might be. Still, winter is winter, a season to be tided over rather than doted upon, and anything which helps to make the time pass agreeably is matter for thankfulness. So I am asked to write something about the habit we are in at our house of feeding birds in cold weather, and thus keeping them under the windows. Really we have done nothing peculiar, nor has our success been beyond that of many of our neighbors; but such as it is, the work has given us much enjoyment, and the readers of BIRD-LORE are welcome to the story.

Our method is to put out pieces of raw suet, mostly the trimmings of beefsteak. These we attach to branches of trees and to the veranda trellis, taking pains, of course, to have them beyond the cat's reach (that the birds may feed safely) and at the same time well disposed for our own convenience as spectators. For myself, in addition, I generally nail pieces of the bait upon one or two of the outer sills of my study windows. I like, as I sit reading or writing, to hear now and then a Nuthatch or a Chickadee hammering just outside the pane. Often I rise to have a look at the visitor. There is nothing but the glass between us, and I can stand near enough to see his beady eyes, and, so to speak, the expression

of his face. Sometimes two birds are there at once, one waiting for the other. Sometimes they have a bit of set-to. Then, certainly, they are not without facial expression.

Once in a while, in severe weather, I have sprinkled crumbs (sweet or fatty crumbs are best—say bits of doughnut) on the inside ledge, and then, with the window raised a few inches, have awaited



TORREY'S BRANCH ESTABLISHMENT

callers. If the weather is bad enough they are not long in coming. A Chickadee alights on the outer sill, notices the open window, scolds a little (the thing looks like a trap—at all events it is something new, and birds are conservative), catches sight of the crumbs (well now, that's another story), ceases his *dee, dee, dee*, and the next minute hops inside.

The crumbs prove to be appetizing, and by the time he has swallowed a few of them he seems to forget how he came in, and instead of backing out, as a reasonable being like a Chickadee might be expected to do, he flies to another light of the bay window. Then, lest he should injure himself, I must get up and catch him and show him to the door. By the time I have done this two or three times within half an hour I begin to find it an interruption to other work, and put down the window. White-breasted Nuthatches and Downies come often to the outer sill, but only the Chickadees ever venture inside.

These three are our daily pensioners. If they are all in the tree together, as they very often are, they take precedence at the larder according to their size. No Nuthatch presumes to hurry a Woodpecker, and no Chickadee ever thinks of disturbing a Nuthatch. He

may fret audibly, calling the other fellow greedy, for aught I know, and asking him if he wants the earth; but he maintains a respectful distance. Birds, like wild things in general, have a natural reverence for size and weight.

The Chickadees are much the most numerous with us, but taking the year together the Woodpeckers are the most constant. My notes record them as present in the middle of October, 1899, and now, in the middle of October, 1900, they are still in daily attendance. Perhaps there were a few weeks of midsummer when they stayed away, but I think not. One pair built a nest somewhere in the neighborhood and depended on us largely for supplies, much to their convenience and our pleasure. As soon as the red-capped young ones were able to fly the parents brought them to the tree and fed them with the suet (it was a wonder how much of it they could eat), till they were old enough to help themselves. And they act, old and young alike, as if they owned the place. If a grocer's wagon happens to stop under the tree they wax



DOWNY WOODPECKER

Bromide enlargement $\times 3$.

indignant, and remain so till it drives away. Even the black cat, Satan, has come to acknowledge their rights in the case, and no longer so much as thinks of them as possible game.

I have spoken, I see, as if these three species were all; but, not to mention the Blue Jays, whose continual visits are rather ineffectively frowned upon (they carry off too much at once), we had last winter, for

all the latter half of it, a pair of Red-bellied Nuthatches. They dined with us daily (pretty creatures they are) and stayed so late in the spring that I began to hope the handy food supply would induce them to tarry for the summer. They were mates, I think. At any rate, they preferred to eat from the same bit of fat, one on each side, in great contrast with all the rest of our company. Frequently, too, a Brown Creeper would be seen hitching up the trunk or over the larger limbs. He likes pleasant society, though he has little to say, and perhaps found scraps of suet in the crevices of the bark, where the Chickadees, who are given to this kind of providence, may have packed it in store. Somewhat less frequently a Gold-crest would come with the others, fluttering amid the branches like a sprite. One bird draws another, especially in hard times. And so it happened that our tree, or rather trees,—an elm and a maple,—were something like an aviary the whole winter through. It was worth more than all the trouble which the experiment cost us to lie in bed before sunrise, with the mercury below zero, and hear a Chickadee just outside singing as sweetly as any Thrush could sing in June. If he had been trying to thank us, he could not have done it more gracefully.

The worse the weather, the better we enjoyed the birds' society; and the better, in general, they seemed to appreciate our efforts on their behalf. It was noticeable, however, that Chickadees were with us comparatively little during high, cold winds. On the 18th of February, for example, we had a blizzard, with driving snow, the most inclement day of the winter. At seven o'clock when I looked out, four Downy Woodpeckers were in the elm, all trying their best to eat, though the branches shook till it was hard work to hold on. They stayed much of the forenoon. At ten o'clock, when the storm showed signs of abating, though it was still wild enough, a Chickadee made his appearance and whistled *Phoe* again and again—"a long time," my note says—in his cheeriest manner. Who can help loving a bird so courageous, "so frolic, stout, and self-possessed?" Emerson did well to call him a "scrap of valor." Yet I find from a later note that "there were nothing like the usual number of Chickadees so long as the fury lasted." Doubtless most of them stayed among the evergreens. It is an old saying of the Chickadee's, frequently quoted, "Be bold, be bold, but not too bold." On the same day I saw a member of the household snowballing an English Sparrow away from one branch, while a Downy Woodpecker continued to feed upon the next one. The Woodpecker had got the right idea of things. Honest folk need not fear the constable.

For Teachers and Students

Birds and Seasons

FIRST SERIES

BEGINNING with this number, BIRD-LORE inaugurates an outline course of bird-study for the year, which it is hoped will be of assistance to both teachers and students. 'Keys' and 'Manuals' for identification of at least the more common species are now so readily accessible it is assumed that the student is well equipped in this respect, but we believe that the value of these books can be greatly increased by the addition of exact information in regard to the manner and times of occurrence of the birds of definite localities. That is, given a text-book for the purpose of identifying, and the student can have no other more desirable book than a companion volume which will tell him just what birds he may expect to find and just when he may expect to find them. In other words, the ideal manual would be one on the birds of your own immediate vicinity.

In the first place, therefore, BIRD-LORE will attempt to secure for its readers information in regard to the birds about their homes, and, as a contribution toward this end, it will present lists of birds from six localities in the United States, namely, Boston, Mass., by Ralph Hoffmann; New York City, by the Editor; Philadelphia, by Witmer Stone; Oberlin, Ohio, by Lynds Jones; Glen Ellyn, Ills., by B. F. Gault; San Francisco, by Charles Keeler.

These lists, of course, cover only a small portion of the ground, but it is further proposed to aid students in this respect by enabling them to secure copies of desirable local bird-lists which have been published. Authors often have duplicate copies or 'extras' of such lists, reprinted from some scientific publication, difficult in itself to secure, which they would be glad to dispose of, and we invite, indeed urge, them to send us the titles of such local lists, or other papers on birds in nature, with the prices asked, and these titles will be published in BIRD-LORE without charge.

The learning of a bird's name, however, is only the first step in bird-study, and as a means of directing the student into certain definite lines of work, we shall suggest appropriate subjects for study throughout the year.

Migration is undoubtedly the most striking phenomenon of bird-life, and to its influences are due those marked changes in our bird

population which make no two months in the bird student's year alike, and give to his outings a perennially renewed interest. Consequently, the subject which has most naturally suggested itself for the year's study is that of 'Birds and Seasons.'

Under this head the writers we have mentioned will call the student's attention to the more significant phases of bird-life as they are controlled by season, and there will be added suggestions for lines of study, related articles, and references to the literature of the subjects under consideration. Thus we may take up in their due time the questions of the relation of food to the distribution of birds, migration, mating, singing, nesting, molting, etc.

Such a plan, it seems to us, should be of value not only to the isolated worker but to the members of bird clubs and natural history societies, who it is hoped may find it advisable to take the course of study here suggested.

In this connection, we would call the attention of our more recent readers to BIRD-LORE'S Advisory Council, composed of over fifty prominent ornithologists, distributed throughout the United States and Canada, who have consented to respond to requests for information and advice. The names and addresses of members of the Council were published in BIRD-LORE for February, 1900, and an amended list will be published in our next issue. —

DECEMBER AND JANUARY BIRD-LIFE NEAR BOSTON

BY RALPH HOFFMANN

There is practically no southward or northward movement of birds between Christmas week and St. Valentine's Day. A bird seen between these dates is either a regular or an occasional winter resident, a chance straggler who has lost his way and his migrating companions, or one of those northern visitors whose coming no one can foretell. Not only is the number of species very small at this season, but the individuals have become comparatively very scarce. In the deep woods we walk in utter solitude, until at last the whirr of a Grouse or the lisp of distant Chickadees breaks the stillness. For the rarer winter birds we must look into sheltered hollows, or near the sea, where the snow soon disappears. Our intercourse with the few friends that are left now gains an added value. We make pilgrimages to some wintering Song Sparrow, and feel repaid for a long walk by the sight of a Shrike balancing on the top of a tree. The squawk of a Robin, so familiar in summer, is now a startling sound. By hanging suet, bones or broken nuts near the house, we shall attract the Chickadees and their companions, the Nuthatches and Downy Woodpeckers, and all soon become regular and most

welcome visitors. Occasionally there comes a winter when something impels the northern wanderers, the Crossbills, Redpolls, and Pine Grosbeaks to move southward in force. These unfamiliar visitors lend to winter a touch of the excitement which characterizes the time of migration. There are strange notes in the air and flocks of bright colored birds with an engaging mixture of restlessness and confidence; the lean and barren season now becomes a time of plenty.

PERMANENT RESIDENTS

Bob-White,* Ruffed Grouse, Red-shouldered Hawk (many other Hawks are now and then met with in winter), Screech Owl (all the Owls are resident, but this species is commonest near man), Hairy Woodpecker, Downy Woodpecker, Flicker,* Blue Jay, Crow, Meadowlark,* Goldfinch, House Sparrow, Song Sparrow,* White-breasted Nuthatch, Chickadee.

NOTE.—Individuals of a few other hardy species often winter in favorable localities, e. g., Swamp Sparrow, Kingfisher.

WINTER VISITANTS

Regular.—Herring Gull † (the common harbor Gull; several other species occur off shore), Golden-eye † (the common harbor Duck; many other Ducks, as well as Grebes and Loons occur off shore), Shore Lark † (regular only on the beaches), Snowflake † (occasionally occurs inland), Tree Sparrow, Juncos, Northern Shrike, Myrtle Warbler, † Brown Creeper, Golden-crowned Kinglet.

Irregular.—Pine Grosbeak, Purple Finch, White-winged Crossbill, American Crossbill, Pine Finch, Redpoll, Cedar Waxwing, Red-breasted Nuthatch, Robin (there is often an influx of Robins and Cedar Waxwings in midwinter).

NOTE.—Individuals of a few other species often winter in favorable localities, e. g., White-throated Sparrow, Winter Wren.

DECEMBER AND JANUARY BIRD-LIFE NEAR NEW YORK CITY

BY FRANK M. CHAPMAN

Although during the winter our bird population is reduced to the minimum, the comparative advantages of ornithology as a field study are then more evident than at any other season. The entomologist has hung up his net, the botanist laid aside his vasculum, but the ornithologist, putting opera glass in pocket, takes the field with the certainty of meeting some feathered friend, and the always encouraging possibility of forming a new acquaintance.

Winter begins when frost seals the ground, the ponds and streams, and snow covers the earth. Then the Woodcock, Mourning Dove, Kingfisher, Rusty Blackbird, Cowbird, and the Vesper, Field, Chipping and Swamp Sparrows go further south and we are left with only the hardy, permanent residents and winter visitants. From the date of the departure of these tardy migrants until, late in February,

*Occurs regularly in winter only near the coast.

†Occurs regularly only near the coast.

when the coming of the first Robin or Grackle announces the birth of a new bird year, no evidences of a regular migratory movement are to be observed; and this can be said of no other season.

Bird-life, however, is by no means at a standstill, the irregular wanderings of many winter birds, such as the Crossbills, Redpolls, and Pine Grosbeak, which may be abundant some years and absent others, always giving the bird-lover something to look and to hope for. Again, we may find in some sheltered spot a waif or stray of the migration, perhaps a Hermit Thrush, Dove, or Robin, or even a Thrasher; while on one surprising occasion a Blue-winged Warbler was actually seen in January (January 6, 1900, Bronx Park. See BIRD-LORE, 1900, pp. 26, 59).

Food is now the controlling factor in a bird's life, and from the Herring Gulls in our harbor to the Juncos at our doorstep the movements of birds are governed by the supply of food.

This, then, is the season when, by catering to their wants, we may establish relations with birds who are strangers to us in the summer. Nor should we confine our labors to our dooryards, but remember the Bob-Whites, and the White-throated and Song Sparrows, who are picking up a scanty living in the fields and woods.

PERMANENT RESIDENTS

Bob-White, Ruffed Grouse, Red-shouldered Hawk, Red-tailed Hawk, Broad-winged Hawk,* Marsh Hawk, Sparrow Hawk, Duck Hawk,* Sharp-shinned Hawk, Cooper's Hawk,* Bald Eagle,* Screech Owl, Long-eared Owl,* Short-eared Owl, Barred Owl, Great Horned Owl,* Downy Woodpecker, Hairy Woodpecker, Flicker, American Crow, Fish Crow, Blue Jay, Starling (local), Meadowlark, Song Sparrow, House Sparrow, American Goldfinch, European Goldfinch (local), Purple Finch, Cardinal* (local), Cedar Waxwing, Carolina Wren* (local), Tufted Titmouse* (local), White-breasted Nuthatch, Bluebird.

WINTER VISITANTS

Regular.—Herring Gull (other Gulls, and water birds are found in the Lower Bay and similar favorable places), Rough-legged Hawk, Acadian Owl,* Horned Lark, Prairie Horned Lark, Ipswich Sparrow (coast only), White-throated Sparrow, Junco, Tree Sparrow, Northern Shrike,* Myrtle Warbler, Winter Wren, Brown Creeper, Golden-crowned Kinglet.

Irregular.—Goshawk, Snowy Owl, Pine Finch, Redpoll, Snowflake (more regular near the coast), Lapland Longspur,* American Crossbill, White-winged Crossbill, Pine Grosbeak, Red-breasted Nuthatch.

DECEMBER AND JANUARY BIRD-LIFE NEAR PHILADELPHIA

BY WITMER STONE

December and January in this vicinity constitute a period of 'winter rest' in bird-life, between the disappearance of the last band of late fall migrants and the pioneer spring arrivals from the south.

*Uncommon.

The lists of the daily observer reach their lowest ebb at this time. The total number of species present is much greater than is generally supposed, but the birds are not very active and have but little to say; while the observer perhaps is cold and fast loses his enthusiasm in the face of a biting wind or a driving snow-storm.

Low meadows and swamps with sheltering thickets are the most favorable localities, and here will be found great mixed flocks of Tree Sparrows, Song Sparrows and Juncos, with perhaps a few Field and Swamp Sparrows. This association in flocks is characteristic of most birds at this season. The Meadowlarks congregate in this manner and come down from the open upland to seek food and shelter on the broad river marshes; while in the tree-tops of the woods and orchards are mixed troops of Nuthatches, Chickadees and Golden-crowned Kinglets, with perhaps a Downy Woodpecker or Tufted Tit.

Crows are probably the most conspicuous of all winter birds, flying morning and evening in long black lines to and from their roosts. Winter is not a time of song, but we have some exceptions to the rule. Every bright sunny day the clear whistle of the Carolina Wren may be heard in the sheltered ravines, and the voices of the Cardinal and Tufted Tit, which he seems to imitate, are by no means silent. An added charm that this season possesses is the ever-present possibility of some sudden flight of Snowflakes, Crossbills, Redpolls or other rare visiter from the north, and no weather is too severe for the bird-lover when such acquaintances may be formed. Southern New Jersey, with its sheltering pines and cedars and its deep swamps, is a great winter rendezvous for birds, and many species winter there regularly which rarely or never occur in Pennsylvania in December or January.

PERMANENT RESIDENTS

Great Blue Heron, Woodcock, Bob-White, Dove, Red-tailed Hawk, Red-shouldered Hawk, Broad-winged Hawk, Cooper's Hawk, Sharp-shinned Hawk, Sparrow Hawk, Great Horned Owl, Screech Owl, Long-eared Owl, Barn Owl, Hairy Woodpecker, Downy Woodpecker, Crow, Blue Jay, Meadowlark, Goldfinch, House Sparrow, Song Sparrow, Swamp Sparrow, Field Sparrow, Cardinal, Cedar Waxwing, Carolina Wren, Tufted Titmouse, White-breasted Nuthatch.

WINTER VISITANTS

Regular.—Herring Gull, Rough-legged Hawk, Pigeon Hawk, Marsh Hawk, Short-eared Owl, Junco, Tree Sparrow, White-throated Sparrow, Pine Finch, Purple Finch, American Pipit, Winter Wren, Brown Creeper, Black-capped Chickadee, Golden-crowned Kinglet.

Irregular (omitting Water Fowl).—Duck Hawk, Goshawk, Acadian Owl, Snowy Owl, Barred Owl, Horned Lark, Prairie Horned Lark, American Crossbill, White-winged Crossbill, Pine Grosbeak, Snowflake, Lapland Longspur, Redpoll, Northern Shrike.

More or less regular in southern New Jersey in winter, occasional near Philadelphia: Killdeer, Turkey Vulture, Kingfisher, Flicker, Yellow-bellied Sapsucker, Phoebe, Red-winged Blackbird, Purple Grackle, Cowbird, Vesper Sparrow, Savanna Sparrow, Ipswich Sparrow (on coast), Sharp-tailed Sparrow (on coast), Myrtle Warbler, Long-billed Marsh Wren, Short-billed Marsh Wren, Carolina Chickadee, Robin, Hermit Thrush, Bluebird.

DECEMBER AND JANUARY BIRD-LIFE AT OBERLIN, OHIO

BY PROF. LYNDS JONES

Winter does not come upon us with any severity until late in December. It is rarely true that snow covers the ground for more than a few days at a time during the entire month. Frequently the weather is mild until well toward the New Year, with only an occasional sharp day. On account of this mildness many birds which go southward when winter really comes remain with us until Christmas time.

January is also a varied month, frequently opening with severe weather and snow-covered landscape. Toward the middle of the month there is usually a thaw which may take away all the snow and be so spring-like that the birds begin to sing and mate, but none come up from the south. It is during the last week of December and the first week or ten days of January that the most of the winter birds visit us, many of them remaining to or beyond the end of January. Following the thaw the winter settles down again in even greater severity, the month closing with a zero temperature and not a little snow. But however the weather may be, the January birds are permanent residents and winter visitors, none of them birds from the south. Sometimes an ice-storm follows the January thaw, covering everything with a thick ice-coat, and then the birds may be driven south. This often happens to the birds of prey, especially the Hawks. The Owls seem able to survive in any weather.

PERMANENT RESIDENTS

Herring Gull, Bob-White, Ruffed Grouse, Mourning Dove (rare), Marsh Hawk (uncommon), Sharp-shinned Hawk, Cooper's Hawk (uncommon), Red-tailed Hawk, Red-shouldered Hawk, Broad-winged Hawk (rare), Bald Eagle, Pigeon Hawk (rare), Sparrow Hawk, Barn Owl (rare), Long-eared Owl, Short-eared Owl (rare), Barred Owl, Saw-whet Owl (rare), Screech Owl, Great Horned Owl (rare), Hairy Woodpecker, Downy Woodpecker, Red-headed Woodpecker, Red-bellied Woodpecker, Flicker (not common), Prairie Horned Lark, Blue Jay, American Crow (not common), Meadowlark (not common), American Goldfinch, Song Sparrow, Cardinal, Cedar Waxwing (not common) White-breasted Nuthatch, Tufted Titmouse, Chickadee.

WINTER VISITANTS

Horned Grebe (rare), Iceland Gull (rare), Old-Squaw (rare), Goshawk (rare), Rough-legged Hawk, Golden Eagle (uncommon), Snowy Owl (rare), Hawk Owl (rare), Horned Lark, Purple Finch, American Crossbill, White-winged Crossbill (rare), Red-poll (rare), Pine Finch (rare), Snowflake, Lapland Longspur, Tree Sparrow, Northern Shrike, Winter Wren, Brown Creeper (uncommon), Golden-crowned Kinglet.

SUMMER RESIDENTS WHICH LINGER UNTIL DECEMBER

Woodcock, Killdeer, Cowbird, Red-winged Blackbird, Bronzed Grackle, White-throated Sparrow, Towhee, Robin, Bluebird.

FALL MIGRANTS WHICH PASS SOUTH IN DECEMBER

Mallard, Canada Goose, Rusty Blackbird, Fox Sparrow, White-throated Sparrow, American Pipit, Myrtle Warbler, Ruby-crowned Kinglet.

DECEMBER AND JANUARY BIRD-LIFE AT GLEN ELLYN (NEAR CHICAGO), ILLINOIS

BY BENJAMIN T. GAULT

A marked feature of our winter months are the daily movements of the Crows as they go to and from their roosts. The Downy and Hairy Woodpeckers, with the White-breasted Nuthatches and Chickadees, contribute their share in rendering our orchards and woods attractive, while the Shore Larks and Lapland Longspurs serve well in a similar capacity for our fields.

Visiting the osage hedges and sprout-woodland pastures, we may find, to our delight, small parties of Juncos, Tree Sparrows and Goldfinches busily plying their vocation of seed-gathering.

The Northern Shrike, Rough-legged, Red-tailed and Red-shouldered Hawks, together with the Screech and Short-eared Owls, and occasional Redpoll Linnets, are more or less in evidence during these months.

In late January we may chance to hear the cheering notes of the Meadowlark, or perhaps stumble upon a belated or over-zealous Red-headed Woodpecker or Flicker, or, possibly, in some sheltered retreat, find the Robin. However, these are incidents not always to be expected or depended on.

A reference to the haunts of the Prairie Hen has been omitted; altogether of a local nature, one must sometimes search long and diligently to find it.

Such then, briefly, are the main features of our winter bird-life, which, to be more thorough and explicit, naturally tabulate themselves beneath the following headings:

PERMANENT RESIDENTS

Ruffed Grouse, Prairie Hen, Cooper's Hawk, Red-tailed Hawk, Red-shouldered Hawk, Barred Owl, Screech Owl, Hairy Woodpecker, Downy Woodpecker, Prairie Horned Lark, Blue Jay, Crow, House Sparrow, Goldfinch, White-breasted Nuthatch, Chickadee.

WINTER VISITANTS

Regular.—Rough-legged Hawk, Short-eared Owl, Horned Lark, Lapland Longspur, Tree Sparrow, Junco, Northern Shrike.

Irregular.—Canada Goose, Long-eared Owl, Red-headed Woodpecker, Flicker, Meadowlark, Rusty Blackbird, Evening Grosbeak, Redpoll, Cedar Waxwing, Brown Creeper, Golden-crowned Kinglet, Ruby-crowned Kinglet, Robin.

DECEMBER AND JANUARY BIRD-LIFE ON EASTERN SIDE OF SAN FRANCISCO BAY

BY CHARLES KEELER

To describe the bird life of California within the limits of the present series of sketches would be an impossible task. This great state, stretching in a broad band along the Pacific coast, diversified as it is by two long mountain ranges extending in a general northerly and southerly trend, embracing a wide interior valley and cutting off the district to the east, which is left an arid waste, contains a greater number of faunal zones than any other region of corresponding size on the American continent. In the valleys the rigors of an eastern winter are unknown; in the mountains the snow-drifts are as deep as in Canada. Even in so restricted a section as the San Francisco Bay region there is considerable diversity in fauna and flora. Upon the western side of the bay, and more particularly on the north-western shore, the redwood forests determine to a large extent the distribution of both plants and birds, while on the eastern shore the redwoods are confined to one or two restricted pockets in the hills. It is to the birds of this eastern side that I shall confine my observations. The hills here rise to a height of a thousand feet or more, with a gently descending plain at their base, reaching down to the bay shore two or three miles away. These hills are treeless save where forests of eucalyptus have been planted and are covered with grass and chaparral. In the little cañons which cut through the range at frequent intervals are groves of superb live-oak trees in the lower reaches and laurel, scrub oak and alders higher up.

In the severest winter weather the thermometer seldom falls as low as 25° , and frosty mornings are the exception. Rain falls at more or less frequent intervals during this season, but showers are almost unknown during the summer months. As a consequence of the mildness of the winters, birds are quite as abundant at this time of year as at any other, and the list of permanent residents is comparatively large. Some among these, such as the California Brown Towhee, Spurred Towhee, the Green-backed or Arkansas Goldfinch, Plain-crested Titmouse, Wren-Tit, California Bush-Tit, California Jay, Anna's Hummingbird, Western Meadowlark, Samuel's Song Sparrow, and the Red-shafted Flicker, are, so far as I can detect, permanent residents. By this I mean that there seems to be no evidence that the individuals which nest here go away for the winter to be replaced by others of the same species. Of course this is a difficult point to prove, but there is every indication of stability with these species. They are found in about the same places all the year round, and at no one season do they seem more abundant than at another. To have learned to distinguish them

readily will be a solid beginning in birdcraft for any one in this region.

In addition to these faithful dwellers in our hills and cañons are a number of other species which are nearly always with us, but in greater or less abundance, indicating a more migratory habit. Among these I may mention the Gambel's Sparrow, which nests here rather sparingly, but comes in large flocks for the winter, the Lutescent Warbler, Vigor's Wren, Western Goldfinch, California Shrike, Desert Sparrowhawk and Western Red-tailed Hawk. The two Hawks and the Shrike might be placed in the first list with almost equal propriety.

In the months of December and January, then, the above-mentioned birds may be confidently sought for in the cañons and gardens. Associating with them, however, is a host of winter visitants which are equally abundant and peculiarly characteristic of the rainy season. The most numerous and constant of these are the Golden-crowned Sparrow, Oregon Junco, American Pipit, Audubon's Warbler, Dwarf Thrush and Ruby-crowned Kinglet. The Western Golden-crowned Kinglet is less common, although at times it may be found in considerable numbers in the live-oak trees. Townsend's Sparrow is with us all winter, but its retiring habits make it a less conspicuous element in the midwinter company. The Red-breasted Nuthatch is irregular in its visits, it sometimes being found in large numbers, and again being wholly absent. The same may be said of both the Western Robin and the Western Bluebird, which roam the country in large flocks and pass from one locality to another. They are usually abundant after a heavy snowfall in the mountains. The Varied Robin is perhaps more constantly with us during the winter months, but is so shy and quiet that it is often overlooked. Among the other less abundant winter visitants, which are nevertheless not rare, are Hutton's Vireo, Pine Finch, Say's Pewee, Red-breasted Woodpecker, Gairdner's Woodpecker, California Woodpecker and the Cedar Waxwing.

Of midwinter birds which are rare or accidental in their visits may be mentioned Lewis' Woodpecker, the Evening Grosbeak, and Townsend's Solitaire. From the above lists it is evident that our winter groves and cañons are teeming with bird-life. Some among these December and January species may even favor us with an occasional snatch of song, although their call notes are most frequently heard. The Golden-crowned, and Gambel's Sparrows are constant winter singers: Samuel's Song Sparrow often sounds its ditty, and the note of the Western Meadowlark is heard from time to time in the fields. The Wren-Tit sings more or less in its simple fashion the year through, and its characteristic strain may be heard ever and anon in the cañon. Thus it happens that we may find intimations of approaching spring

throughout the winter, and evidences of joy and conviviality in the midst of December.

SUGGESTIONS FOR THE MONTHS' STUDY

Food and Distribution.—Observe relation between the food supply, as it is controlled by temperature, and the departure of the last migrants (see preceding articles). Compare the food of migratory, summer-resident birds with that of winter birds; the former being insect- and fruit-eaters, the latter, seed- or flesh-eaters. Note variation in the food of certain birds, such as the Flicker, Bluebird and Robin, which, insectivorous in summer, later subsist on fruit, including winter berries, and are thus sometimes found throughout the year as far north as Massachusetts. Are these birds represented by the same individuals at all seasons? What permanent residents are resident in the strict sense of the word? During the winter the relation between food and distribution is especially marked, a failure of the food-supply at the north occasionally bringing us great numbers of boreal birds. (See Fisher and Loring, Evening Grosbeaks in New York, 'Forest and Stream,' XXXIV, 1890, p. 64; Brewster, Evening Grosbeak in New England, *Ibid.*, p. 44; Butler, 'Some Notes Concerning the Evening Grosbeak,' 'The Auk,' IX, 1892, p. 238; Brewster, 'A Remarkable Flight of Pine Grosbeaks,' 'The Auk,' XII, 1895, p. 245; Chapman, 'The Season's Flight of Cross-bills,' BIRD-LORE, II, 1900, pp. 25, 59.)

The presence of food may induce birds which generally winter further south to remain through the winter. A small flock of Doves passed the winter at Englewood, N. J., feeding exclusively, as far as was observed, on the grain in a pile of chaff from buckwheat, winnowed in the field. Myrtle Warblers are common at the same locality during the winter when there is an abundance of bayberries, but when there are no berries there are no Warblers.

Observe how the daily wanderings of flocks of Juncos, Tree Sparrows, etc., are governed by food. Are these flocks composed of the same individuals? Have they a regularly frequented roosting place? Note the roosting habit of Crows (see Stone, BIRD-LORE, I, 1899, 177).

Food thus exerts so great an influence on a bird's range at this season, when the supply may be limited, that we may govern at least the local distribution of birds by supplying them with proper food. (See Torrey, in this number of BIRD-LORE; Davenport, in Lange's 'Our Native Birds'; Merriam, 'Birds of Village and Field,' BIRD-LORE, I, 1899, pp. 19, 55, 185.)

Economic Value of Winter Birds.—At this season, Hawks and Owls, by destroying harmful rodents, Sparrows, by eating the seeds of injurious weeds, and Creepers, Woodpeckers, Nuthatches, Chickadees and Golden Kinglets, by devouring the eggs and larvæ of insects, are of inestimable benefit to man. (See Weed, 'Winter Food of the Chickadee,' publications of the New Hampshire Agricultural Experiment Station, Durham, N. H.; Forbush, Mass. Crop Rep. for July, 1895, pp. 20-32; Beal, 'Food of Woodpeckers,' Bull. No. 7, Biological Survey, U. S. Dept. of Agriculture;* Judd, 'Birds as Weed Destroyers,' Yearbook of Dept. of Agriculture* for 1898, pp. 221-232; Fisher, 'Hawks and Owls in Relation to Agriculture.')

Bird-Census.—The comparatively small number of birds present during the winter, together with the absence of foliage, except on coniferous trees, make it possible to estimate the number of individuals occupying a given area. Such estimates are not only of interest in themselves, but they are of assistance in determining the economic value of birds. (See beyond, 'A Christmas Bird Census.')

*For all government publications apply to the Supt. of Documents, Washington, D. C.

In this connection methods of recording observations are of importance (See Pynchon, 'Every-Day Study of Birds for Busy People, Including a method of Recording Observations,' *BIRD-LORE*, II, 1900, p. 19).

SUGGESTIONS FOR THE MONTHS' READING

Thoreau, 'Winter,' also 'Winter Animals' and 'The Pond in Winter' in 'Walden'; Burroughs, 'Winter Sunshine,' also 'A Snow-Storm' and 'Winter Neighbors' in 'Signs and Seasons'; Torrey, 'A Florida Sketch Book,' also 'Winter Birds about Boston' in 'Birds in the Bush,' 'A New England Winter,' 'A Rambler's Lease,' and 'December Out-of-Doors' in 'The Foot-Path Way'; Bolles, 'The Land of the Lingering Snow'; Wright, 'A Winter Mood' in 'The Friendship of Nature'; Parkhurst, 'December' and 'January' in 'The Birds' Calendar'; Keeler, 'January in Berkeley' in 'Bird Notes Afield.'



1. What Bird is this?

Field Description.—Length, 6.25 in. Hind-neck, rufous; back and crown black and buff; outer ail-feathers marked with white; breast black, more or less veiled with white; belly white. *Winter-Range*—From Middle States and Colorado northward.

NOTE.—Each number of *BIRD-LORE* will contain a photograph, from specimens in the American Museum of Natural History, of some widely distributed, but, in the eastern United States, at least, little-known bird, the name of which will be withheld until the succeeding number of the magazine, it being believed that this method of arousing the student's curiosity will result in impressing the bird's characters on his mind far more strongly than if its name were given with its picture.

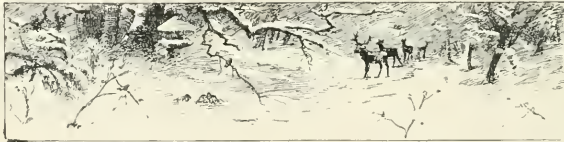
A Christmas Bird-Census

IT is not many years ago that sportsmen were accustomed to meet on Christmas Day, 'choose sides,' and then, as representatives of the two bands resulting, hie them to the fields and woods on the cheerful mission of killing practically everything in fur or feathers that crossed their path—if they could.

These exceptional opportunities for winning the laurels of the chase were termed 'side hunts,' and reports of the hundreds of non-game birds which were sometimes slaughtered during a single hunt were often published in our leading sportsmen's journals, with perhaps a word of editorial commendation for the winning side. We are not certain that the side hunt is wholly a thing of the past, but we feel assured that no reputable sportsman's journal of today would venture to publish an account of one, unless it were to condemn it; and this very radical change of tone is one of the significant signs of the times.

Now BIRD-LORE proposes a new kind of Christmas side hunt, in the form of a Christmas bird-census, and we hope that all our readers who have the opportunity will aid us in making it a success by spending a portion of Christmas Day with the birds and sending a report of their 'hunt' to BIRD-LORE before they retire that night. Such reports should be headed by the locality, hour of starting and of returning, character of the weather, direction and force of the wind, and the temperature; the latter taken when starting. The birds observed should then be added, following the order in which they are given in the A. O. U. 'Check List,' with, if possible, the exact or approximate number of individuals of each species observed.

Promptness in sending these lists to BIRD-LORE (at Englewood, N. J.) is urged in order that the best of them may be published in our February number, where they will be not only of interest to other participants in the 'hunt,' but will also constitute, in a measure, a census of Christmas bird-life.



For Young Observers

The Rev. Mr. Chickadee, D.D.

By FLORENCE A. VAN SANT, Jay, Essex County, N. Y.

A little clergyman is he,
With black and white cravat ;
He bears a coveted degree,
And wears a soft silk hat.
With happy heart and merry voice,
He braves the cold and heat ;
And to the loved one of his choice,
He whistles soft and sweet.



So overflowing is his strain,
That he could dub "D.D."
Young theologues with meager brain
And bump of vanity.
His sect is congregational,
The wild woods are his church,
The wind his "choir invisible,"
His pulpit is a birch.

The sermon we should not forget,
"Happy and cheerful be,
Have diligence, be brave, don't fret,"
Says Chickadee, D.D.

My Exploit with a Crossbill

BY NINA NIGHTINGALE, Wellesley Hills, Mass. (Aged 9½ years)

ONE day some time in January I went to play with a friend. We went out on the lawn to watch some birds we had seen there. When we got out we tried to see how near we could get without frightening them.

I followed them all around and succeeded in getting quite near. They would sometimes allow me to touch them, but I could not pick them up. I decided they were Crossbills, and so that is what I will call them. I went in the house and got a small piece of bread to crumb for them. That was soon gone, though the birds would not touch it. I got another piece and some crackers, which I sprinkled

about the lawn. The birds ate some of the crackers, but none of the bread crumbs. I kept trying to catch them and touched them several times. I did not run after them and make them fly; I just walked about after them and tried to pick them up. I finally picked up one, a female, as I could see from the coloring. I let her go very soon, as she seemed to be afraid of me. I followed the birds everywhere and soon found out that the males were a great trouble, because they kept trying to entice me away from the females.

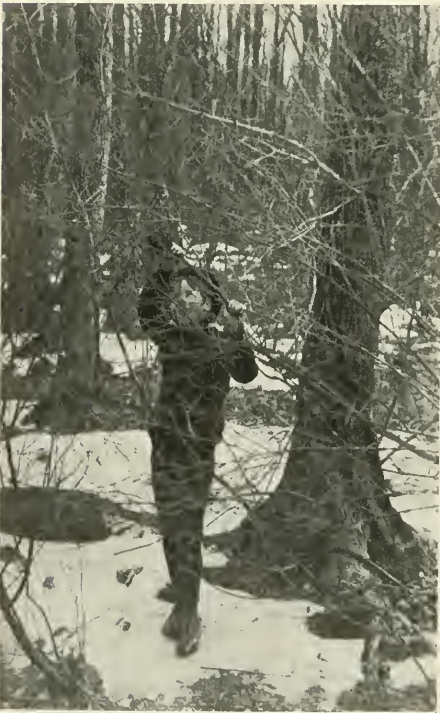
At last I picked up one of the males and he sat on my finger and ate cracker crumbs out of my hand. The Crossbill sat on my hand and did not seem to mind it until I carried him over to my friend for her to see; then, he was greatly frightened. I let him go as soon as she had seen him.

Bird-Nesting in Winter

WHEN the leaves fall how many birds' secrets bare limbs tell! This is the time for collecting birds' nests before they have been wrecked by winter snows and wind. They may readily

be preserved by making use of the simple wire nest-holder described in BIRD-LORE for last December. A record should be kept of the kind of tree or bush in which they were placed and their height from the ground, as an aid in learning their names.

When one knows the commoner nests, such as those of the Robin, Wood Thrush, Vireo and Baltimore Oriole, a census may be made of the number of these birds found about our homes by counting all the nests we can find; though it must be remembered that the first two birds often build a second, and sometimes even a third nest. One young observer wrote BIRD-LORE that he saw sixteen Oriole's nests on the trees in one city block.



BIRD-NESTING IN WINTER

Notes from Field and Study

A Blue Jay Tragedy

The Blue Jay and limb, with a portion of the nest, from which the accompanying photograph was made were found by Mr. H. W. McConoghy, near Lehman, Pa. In building its nest the Jay had procured a strong horse-hair, which was used to



A BLUE JAY TRAGEDY

fasten the nest in a forked oak-limb. In passing the hair over and around the limb the bird made a hair loop, about ten inches long, in which its head became entangled and death by strangulation resulted.—H. M. BECK, *Wilkesbarre, Pa.*

Feeding a Shrike

One March morning a Northern Shrike, in the seclusion of a store doorway on the principal business street of Franklin Falls, N. H., was so engrossed in choking an English Sparrow that he was caught in the hands of a passing pedestrian.

After an imprisonment of five or six hours, the bird came into our possession and was allowed his liberty in a small room. When a piece of raw beefsteak was given him his mode of accepting and using it proved of much interest. There was not a trace of fear in any of his movements during our whole interview. When we approached him and took hold of the meat in his beak, he would tug at it vigorously as if to pull it from our grasp. We did not at first divine his needs, as he hopped about the room seemingly in search of something that could not be found.

The man present had on high storm overshoes, while another pair happened to be on the floor. The Shrike appeared to take a particular fancy to these articles of wear and examined first a shoe on the man's foot, then one on the floor. In a short time his strange actions began to have meaning to us, for it became evident that he desired to impale the meat on the buckle of the shoe, but the tongue of the buckle was not sharp enough to hold the steak that was repeatedly dragged across it. Observing this, a steel kitchen fork was procured and held out before the Shrike, and, without a moment's hesitation, he hopped upon the hand that held it, jerked the meat over the tines, and began to eat. Quick, forward thrusts of his partly spread wings added force to the work done by his powerful beak, as he tore off mouthful after mouthful of the meat. As an experiment, we removed the meat from the tines several times and held the fork some inches away. Each time the Shrike acted in the same manner. He took the meat in his beak, looked about until he saw his substitute for a thornbush, then he hopped to it, worked the meat in position and proceeded with his dinner.

Here was an opportunity for a photographer of bird-life, and we determined to keep him a day or two for sittings. Continuing to eat, perched on the hand that

held the fork, but without restraint, he was carried across two rooms and down a flight of stairs, where a large packing box was made ready for his accommodation, but the plan proved a failure, for in the morning he was found dead. It was thought that he was injured by a severe choking received the preceding day while his captor was inducing him to give up his grip on the English Sparrow, and death was believed to have resulted from this cause.—ELLEN E. WEBSTER, *Franklin Falls, N. H.*

[Mrs. Webster's exceedingly interesting experience should dispose of the absurd theory that Shrikes impale their victims in pure cruelty, it being evident, in this instance, at least, that the combination of a raptorial bill and feeding habits, in connection with passerine feet, which are apparently not adapted to grasping prey, forced the bird to fasten his food to something before he could tear it into edible pieces.—F. M. C.]

American Ornithologists' Union

The Eighteenth Congress of the American Ornithologists' Union was held in Cambridge, Mass., November 12-15, 1900. The attendance of active and associate members and the public was larger than at any previous Congress, the audience at times numbering between two and three hundred.

In addition to the interest aroused by the papers presented, a list of which is printed on another page, the hospitality of the Cambridge members greatly increased the enjoyability of the meeting and at the same time afforded opportunity for that social intercourse which is so important a part of conventions.

On the evening of the 15th, Mr. Edward Waldo Emerson lectured to the members of the Union on his personal recollections and estimate of Thoreau, at the residence of Mr. Brewster, and the following day, after this admirable prelude, a number of the members, under Mr. Brewster's guidance, visited many of the places about Concord which Thoreau has made so familiar to all nature lovers.

At the business meeting of the Union, held at Brewster's Museum on the evening of the 12th, the following officers were

elected for the ensuing year: President, C. Hart Merriam; vice-presidents, Charles B. Cory and C. F. Batchelder; secretary, John H. Sage; treasurer, William Dutcher; councilors, Frank M. Chapman, Ruthven Deane, J. Dwight, Jr., A. K. Fisher, E. W. Nelson, Thomas S. Foberts, Witmer Stone. As ex-presidents, J. A. Allen, William Brewster, D. G. Elliot, and Robert Ridgway also serve as councilors.

There were no candidates for active membership. One honorary member, Dr. A. B. Meyer, two corresponding members, Count E. Arrigoni degli Oddi and Walter E. Bryant, and sixty-seven associate members were elected.

At this meeting notice was given of a proposed change in the by-laws of the Union of far-reaching importance. It provides for the increase of the limit of active membership from fifty to seventy-five, but prohibits the election to this class of more than five members annually. It designates the members of this class Fellows instead of Active Members, and provides for the establishment of a new class of members, likewise limited to seventy-five in number, who shall be known simply as Members, but who shall not have the privileges of voting, etc., accorded Fellows. Action on this proposed amendment will be taken in November, 1901.

The more important features of the public sessions of the Union, which were held in the Nash Lecture room of Harvard University Museum, were memorial addresses on Elliott Coues and George B. Sennett, delivered by D. G. Elliot and J. A. Allen, respectively; William Dutcher's report on the expenditure of about \$1,000 of the Thayer fund, T. S. Palmer's account of the methods employed for the enforcement of the Lacey Bill, and the large series—about four hundred in number—of excellent lantern slides exhibited.

Mr. Dutcher stated that he had secured the services of twenty-three wardens and five superintendents, the latter being members of the Union who volunteered, and with their assistance had given all protection afforded by law to the water birds breeding from Virginia to Maine.

Book News and Reviews

AUDUBON BIRD CHART No. 2. Prang Educational Co., Boston and New York. Price, \$1.30. With COMMON BIRDS: SECOND SERIES, by RALPH HOFFMANN. Mass. Audubon Society, Boston. 12mo. Pages 20.

It is a pleasure to know that the excellent Audubon Bird Chart No. 1, issued by the Massachusetts Audubon Society, in 1898 (see BIRD-LORE, Vol. I, p 27), has met with a success which has warranted the Society in issuing this Chart No. 2. Like Chart No. 1, it contains life-size figures of twenty-six birds reproduced in color even more effectively than those of the previously published chart. This chart, as was the case with its predecessor, is accompanied by a pamphlet by Mr. Ralph Hoffmann, containing well-written biographies of the twenty-six birds figured. We especially commend these Bird Charts, with their accompanying text-books, to teachers, as the most satisfactory investments for the class-room, from an ornithologist's point of view, of which we know.—F. M. C.

BIRDS OF THE YUKON REGION, WITH NOTES ON OTHER SPECIES. By LOUIS B. BISHOP, M.D. North American Fauna, No. 19, pages 47-96, Washington, 1900.

During the summer and early autumn of 1899 Dr. Bishop accompanied Mr. Wilfred H. Osgood, of the Biological Survey, on a "biological reconnaissance of the Yukon River region." The route lay over the White Pass to the headwaters of the Yukon and thence down this river to its mouth. Dr. Bishop presents an introduction on the general features of the bird-life of this little-known part of our country, tables of distribution, and a well-annotated list of 171 species and sub species. Three of these—*Canachites canadensis osgoodi*, *Sayornis saya yukonensis*, and *Contopus richardsoni saturatus*—he has previously described as new ('Auk,' April, 1899).

Dr. Bishop is to be congratulated on the success attending an expedition which was evidently not lacking in hardships, and on the admirable manner in which he has presented its results.—F. M. C.

FOOD OF THE BOBOLINK, BLACKBIRDS, AND GRACKLES. By F. E. L. BEAL, B. S., Assistant Biologist. Bull. No. 13, U. S. Dept. of Agriculture, Division of Biological Survey. Washington, 1900. Pages 77, 1 map, 3 cuts, 2 diagrams.

In this Bulletin, Professor Beal continues his important studies of the food of North American birds, taking, for investigation, a group of birds which are as widely condemned by the average agriculturalist as are Hawks and Owls.

While it does not appear from Professor Beal's extended researches that these birds are as deserving of protection as are the Hawks and Owls, it is evident that their destructive abilities are greatly over-estimated. Indeed, of the nine species whose food has been studied only one is condemned, and this, every bird-lover will regret to learn, is our Bobolink, of which it is said, "Facts force the belief that until some practical method shall be devised to prevent its ravages upon the rice crop there can be no other conclusion than that the good done by the Bobolink does not in any appreciable measure counter-balance the harm."

Lack of space forbids an adequate notice of Professor Beal's paper, which should be in the hands of everyone interested in learning the economic status of our birds.—F. M. C.

INFORMATION CONCERNING GAME; SEASONS, SHIPMENTS, AND SALE. By T. S. PALMER and H. W. OLDS. Circular No. 31, U. S. Dept. of Agriculture, Division of Biological Survey. Washington, 1900. Pages 20.

The publication of this pamphlet further illustrates the wisdom of the drawers of the Lacey Bill when they made the Biological Survey responsible for its enforcement; and it will not be the fault of the Survey if the public remains in ignorance of the provisions of this act.

The contents of this circular are indicated by its title, and its publication by the government gives to it an authoritative lack in other compilations of the game laws.—F. M. C.

Book News

In the future we propose to devote part of BIRD-LORE'S increased space to brief reviews of the contents of the leading ornithological journals, and in carrying out this plan we have been fortunate in securing the assistance of ornithologists whose coöperation is an assurance of our success in presenting a critical résumé of current literature relating to birds. Thus, Dr. J. Dwight, Jr., will review 'The Auk,' Dr. T. S. Palmer, 'The Condor,' and Dr. A. K. Fisher, 'The Osprey' and 'Wilson Bulletin.'

The book reviews will, of course, be continued, and, so far as human nature permits, they will be just and impartial, according to the reviewer's light; condemnation as well as praise being given when it seems deserved.

THE attention of authors of local lists and other papers on field ornithology is called to our effort to place them in communication with students to whom their publications would be of especial assistance (see page 181).

THE Massachusetts Audubon Society has issued a new edition of its attractive Audubon Calendar, which contains twelve colored plates of birds and short articles on the months by as many well-known writers. Copies of it may be obtained for seventy-five cents from Harriet E. Richards, Secretary, 234 Berkeley Street, Boston.

BIRD photographs continue to occupy an increasing space in current literature. The New England Magazine contains an article by Sarah J. Eddy entitled 'The Robin's Nest,' illustrated by twenty-five excellent photographs which graphically depict the life of the nest from the period of incubation until the young were old enough to fly; and the first number of 'The World's Work' publishes twenty-three photographs by A. Radclyffe Dugmore, several of which are by far the best examples we have seen of this skill-

ful photographer's work, if, indeed, they are not the best things of the kind which have been made in this country. Copies of the first-named article may be obtained for ten cents by addressing Box 9, Bristol Ferry, R. I.

THE program of papers presented at the Eighteenth Congress of the American Ornithologists' Union held in Cambridge, Mass., November 12-15, included the following twenty-seven titles:

- In Memoriam: Elliott Coues. D. G. ELLIOT.
 In Memoriam: George B. Sennett. J. A. ALLEN.
 The Sequence of Molts and Plumages of the *Laridae* (Gulls and Terns). JONATHAN DWIGHT, JR.
 A Study of the Genus *Sturnella*. FRANK M. CHAPMAN.
 The Pterylosis of Podargus: with Further Notes on the Pterylography of the *Caprimulgidae*. HUBERT LYMAN CLARK.
 The Molt of the North American Shore Birds (*Limicola*). JONATHAN DWIGHT, JR.
 Nesting of the Yellow-headed Blackbird. Illustrated by lantern slides. THOMAS S. ROBERTS.
 Among the Terns at Muskeget, and on the New Jersey Coast. Illustrated by lantern slides. WM. L. BAILY.
 The Season of 1900 at the Magdalen Islands; with remarks on Bird Photography. Illustrated by lantern slides. HERBERT K. JOB.
 Field Notes on a few New England Birds. Illustrated by lantern slides. WILLIAM BREWSTER.
 Dooryard Ornithology. JOHN N. CLARK.
 The "American Ornithologists' Union" of 1840-45. WITMER STONE.
 Notes on the Spring Migration (1900) at Scarborough, N. Y. LOUIS AGASSIZ FUERTES.
 Exhibition of Unpublished Water-color Paintings of Birds. LOUIS AGASSIZ FUERTES.
 Impressions of Some Hawaiian Birds. H. W. HENSHAW.
 A Visit to the Birthplace of Audubon. O. WIDMANN.
 Natural History of the Alaskan Coast. Illustrated by lantern slides. C. HART MERRIAM.
 Notes on a Nest of Massachusetts Brown Creepers. Illustrated by lantern slides. A. P. CHADBOURNE.
 Bird Studies with a Camera. Illustrated by lantern slides. FRANK M. CHAPMAN.
 Exhibition of Lantern Slides of Birds' Nests and Nesting Haunts, From Nature. MEMBERS.
 Aptochromatism. A reply to Drs. Dwight and Allen. FRANCIS J. BIRTWELL.
 On the Breeding Habits of Leconte's Sparrow. P. B. PEABODY.
 On the Value of Careful Observations of Birds' Habits. EDWARD H. FORBUSH.
 Breeding of the Cerulean Warbler near Baltimore. FRANK C. KIRKWOOD.
 Report of the A. O. U. Committee on the Protection of North American Birds. WITMER STONE.
 Results of Special Protection to Gulls and Terns obtained through the Thayer Fund. Illustrated. WILLIAM DUTCHER.
 The Enforcement of the Lacey Act. T. S. PALMER.

Bird-Lore

A Bi-monthly Magazine

Devoted to the Study and Protection of Birds

OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Edited by FRANK M. CHAPMAN

Published by THE MACMILLAN COMPANY

Vol. II DECEMBER, 1900 No. 6

SUBSCRIPTION RATES.

Price in the United States, Canada, and Mexico, twenty cents a number, one dollar a year, postage paid.

Subscriptions may be sent to the Publishers, at Harrisburg, Pennsylvania, or 66 Fifth avenue, New York City.

Price in all countries in the International Postal Union, twenty-five cents a number, one dollar and a quarter a year, postage paid. Foreign agents, MACMILLAN AND COMPANY, LTD., London.

COPYRIGHTED, 1900, BY FRANK M. CHAPMAN.

Bird-Lore's Motto:

A Bird in the Bush is Worth Two in the Hand.

1900

1900 has been a red-letter year in the annals of American Ornithology, and while we do not propose to review in detail the advances which have been made in various departments of the science of birds, we may count our blessings, as it were, by summing up the more important features of the year's work in the fields of scientific, economic, popular, educational, legislative and protective ornithology.

In the field of science, Dr. Dwight's studies on the molt of North American birds constitute perhaps the most important single contribution to ornithological knowledge, and in combined faunal and systematic work we may mention Dr. Allen's and Mr. Bangs' papers on the birds of the Santa Marta region in Columbia, Mr. Stone's report on the McIlhenny collections from Alaska, a report on the Peary Greenland collections secured by the American Museum of Natural History, Mr. Loomis' studies of California water birds, Professor Beyer's 'Birds of Louisiana,' the first part of Professor McCoun's catalogue of Canadian birds, Dr. Bishop's

'Birds of the Yukon River Region,' and Captain Reynaud's suggestive study of the 'Orientation of Birds.'

In economic ornithology, Dr. Palmer's 'Review of Economic Ornithology in the United States' and Professor Beal's 'Food of the Bobolink, Blackbirds, and Grackles' are notable papers.

On the border line of scientific and popular ornithology are the camera studies of birds which not only present, in graphic form, much that was previously known, but add to our existing stock of information. The ready sale of the books on bird-photography, the increasing demand for popular literature relating to birds, the call for lectures on birds culminating in the inclusion of eight lectures in so representative a course as that of the Lowell Institute, all attest the growing interest in popular ornithology.

The rapid development of nature-study and the important place accorded birds in nature-study courses are well-known facts which have been emphasized during the past year by the inclusion of bird-study in the Chautauqua course and in the comparatively technical course of instruction given at the Woods Holl Marine Biological Laboratory. Nor should we fail to mention here the important educational work of certain of the Audubon Societies.

It is, however, in legislative and protective measures that the most important developments of the year are to be found.

Through the efforts of the Audubon Societies the bird laws of several states were greatly improved, and to the sentiment in favor of bird protection, for which the Audubon Societies are so largely responsible, in connection with the united influence of other bird and game protective associations, may in part be attributed the passage by Congress of the Lacey bill, doubtless the most important act for bird protection ever enacted, and for which every bird-lover cannot be too grateful to Congressman Lacey, who, in introducing and fighting for this bill, did so not alone as a representative of his constituents, but as a representative of the birds.

The far-reaching possibilities of this law are being realized through the foresight which made the enforcement of its provisions the duty of the Biological Survey, where, under the immediate supervision of Dr. Palmer, it bids fair to become an even more efficient means of bird protection than its most ardent supporters had anticipated; as witness the seizure of Gulls in Baltimore, reported beyond in the columns of the Audubon Department.

The proposition advanced by the milliners to the Audubon Societies and the American Ornithologists' Union is presumptive evidence that the efforts of these organizations to protect our birds have not been without their effect on the millinery trade.

Mr. Stone, chairman of the Union's committee on bird protection, has been commendably active, while two members of the Union, Messrs. A. H. Thayer and William Dutcher, have made a record in practical bird protection, which it is hoped will bear fruit in funds with which to continue their work during the coming year.

From every point of view, then, this brief enumeration of the more important developments of the year is encouraging in the extreme, and almost warrants one's belief in the speedy approach of that ornithological millennium when the value of birds to man will be common knowledge.

Bird-Lore for 1901

BIRD-LORE has many friends, but we believe that the most ardent among them does not realize the pleasure it gives us to announce that beginning with the present number, BIRD-LORE is to be enlarged one-fourth. Including advertisements of bird books and magazines, in themselves of interest, each issue will now contain fifty pages; a total of 300 for the year, with about seventy-five illustrations.

This, however, is only a beginning, for there is absolutely no limit to our ambition to add to BIRD-LORE'S value and attractiveness. With the present increase in size we are enabled to carry out some of our plans for the magazine's betterment;

but we have in mind so many others of which we are sure our subscribers would approve, that we trust they will share our impatience in seeing them realized.

BIRD-LORE'S chief feature for the coming year will be the series of articles and lesson-outlines on 'Birds and Seasons,' the first instalment of which, together with an explanation of its objects, will be found on a preceding page.

Should this attempt to establish a definite course of study prove successful, we hope it may be the starting point in the development of an idea which includes a school of popular ornithology, with a summer encampment where both class-room and field instruction could be given by a corps of experienced teachers.

Lack of space prevented us from fulfilling some of the promises for the past year; they will, however, be redeemed during the next twelve months, when we shall publish Mr. Burroughs' account of his rarer bird visitors, Ernest Seton-Thompson's illustrated paper on 'How to Know the Hawks and Owls,' and H. W. Henshaw's important studies of Hawaiian bird-life.

Of unusual interest will be a stenographic report of an address on Audubon delivered by Dr. Elliott Coues before the American Ornithologists' Union in 1897, while Miss Maria R. Audubon will contribute several letters written by her famous grandfather to his son John—her father—in 1827.

Among other articles we may mention Mr. F. A. Lucas' description of the bird rookeries of Walrus Island, in Bering Sea, with some of the most remarkable photographs we have ever seen, Dr. T. S. Palmer's illustrated sketch of 'Ostrich Farming in America,' Dr. J. Dwight, Jr.'s 'How Birds Molt,' and Mr. Montagu Sharpe's 'Bird Protection in Great Britain.'

The illustrations will not only be more numerous but actually better than those we have already published, and will include numerous photographs illustrating an account by the editor of a bird-nesting expedition with John Burroughs.

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 (President of the Audubon Society of the State of Connecticut), Fairfield, Conn., to whom all communications relating to the work of the Audubon and other Bird Protective Societies should be addressed. 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

New Hampshire.....	MRS. F. W. BATCHELDER, Manchester.
Massachusetts.....	MISS HARRIET E. RICHARDS, care Boston Society of Natural History, Boston.
Rhode Island.....	MRS. H. T. GRANT, JR., 187 Bowen street, Providence.
Connecticut.....	MRS. WILLIAM BROWN GLOVER, Fairfield.
New York.....	MISS EMMA H. LOCKWOOD, 243 West Seventy-fifth street, New York City.
New Jersey.....	MISS ANNA HAVILAND, 53 Sandford Ave., Plainfield, N. J.
Pennsylvania.....	MRS. EDWARD ROBINS, 114 South Twenty-first street, Philadelphia.
District of Columbia.....	MRS. JOHN DEWHURST PATTEN, 3033 P street, Washington.
Delaware.....	MRS. WM. S. HILLES, Delamore place, Wilmington.
Maryland.....	MISS ANNE WESTON WHITNEY, 715 St. Paul Street, Baltimore.
South Carolina.....	MISS S. A. SMYTH, Legare street, Charleston.
Florida.....	MRS. C. F. DOMMERICH, Maitland.
Ohio.....	MRS. D. Z. MCCLELLAND, 5265 Eastern Ave., Cincinnati.
Indiana.....	W. W. WOOLEN, Indianapolis.
Illinois.....	MISS MARY DRUMMOND, Wheaton.
Iowa.....	MRS. L. E. FELT, Keokuk.
Wisconsin.....	MRS. GEORGE W. PECKHAM, 646 Marshall street, Milwaukee.
Minnesota.....	MRS. J. P. ELMER, 314 West Third street, St. Paul.
Kentucky.....	INGRAM CROCKETT, Henderson.
Tennessee.....	MRS. C. C. CONNER, Ripley.
Texas.....	
California.....	MRS. GEORGE S. GAV, Redlands.

THE week beginning November 12 was full of significance for bird students. The meeting of the American Ornithologists' Union, always exhilarating, seemed doubly so owing to the general air of hospitality that prevailed in Cambridge. Those members of the Audubon Societies, also members of the American Ornithologists' Union, had many opportunities of coming in touch at the receptions so graciously tendered by Mrs. Brewster and Mrs. Frank Bolles, as well as the noontime gatherings for luncheon at the Colonial Club. Owing to the combination of the two meetings, American Ornithologists' Union and Audubon Conference, many people came to the latter who would otherwise have been absent, so that the majority of working societies, with the exception of Wisconsin, were represented, and it has been decided to endeavor to make such meetings annual.

The conference itself was not perhaps so satisfactory in bringing forth a general

expression of opinion as was the previous social intercourse, but one thing was evident, that the usefulness of the societies and their power of retaining the interest of members is in direct ratio with their educational and law-making trend, and that emotionalism in members is a distinct disadvantage to a society and bound to repel the logical.

Personally, since the recent report of the American Ornithologists' Union Protective Committee, I have changed my mind as to the necessity of a separate conference of Audubon Societies. The vast distance to be traveled in order to meet at any one place will always prevent anything like a representative gathering from all sections. Rather let two members, having the qualifications, from each society join the American Ornithologists' Union as associate members. Let these members meet with the American Ornithologists' Union Protective Committee annually as auxiliaries, give their experi-

ences and receive in return the results of that committee's practical work in upholding the law, and suggestions for their own work for the coming year. Such a fusion would strengthen and unify the work of both bodies without hurting the individuality of either and be thoroughly in line with the twentieth century spirit of all great reforms—coöperation.

M. O. W.

The Audubon Conference.

The first conference of State Audubon Societies was held on the afternoon of November 15, in the Geological Lecture Room of the Museum of Comparative Zoölogy, Cambridge, Mass., delegates being present from the New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, District of Columbia and Illinois Societies.

During the week the daily sessions of the American Ornithologists' Union had drawn together a notable company, both of scientists and bird students of the novice class, the final session of the American Ornithologists' Union in the morning having been devoted to reports from the committee on bird protection and accounts of the application of the law under the Lacey bill through the splendid work of T. S. Palmer, Assistant Chief of the Biological Survey, so that the time seemed most pertinent for a meeting of the Audubon Societies.

The meeting was opened by Dr C. S. Minot, who made a brief introductory address outlining the establishment of the various state societies in general and of the Massachusetts Society in particular. Dr Minot having been then made chairman and Mrs. H. T. Grant, Jr., secretary, the meeting was called to order.

Mr. Ralph Hoffmann spoke of the objects of the conference, of the desirability of federation, of the need for coöperative printing and of the stimulus derived from contact with other workers.

He read a letter from Mrs. Peckham, of the Wisconsin Society, telling of her work in the schools and urging the Societies to use a little publication called *By the Way-*

side as a means of encouraging nature study among the younger members.

Mrs. Wright, of the Connecticut Society, spoke of the necessity of furnishing local secretaries with material to instruct and interest those of whom they sought to make members, saying that leaflets were good as far as they went, but the reading of a leaflet implied interest and that something else was often first necessary to awaken that interest. As a practical illustration of the educational methods practiced by the Connecticut Society, Mrs. Wright explained their free traveling lectures, reading the most general, 'The Birds About Home,' and showing the seventy finely colored slides that accompany it.

Mr. Frank M. Chapman spoke on 'What Can we Do for Our Members,' and citing in illustration the remarkable success which had attended the introduction of bird-study into the Chautauqua course under the supervision of Mrs. Florence Merriam Bailey, he urged that the Audubon Societies use their organization to form classes for the study of birds.

Miss Justus, of the Pennsylvania Society, told how this method had been tried in her state by the formation of six successful bird classes during the past season.

Dr. T. S. Palmer, of the District of Columbia Society, described the methods of that society in fitting nature-study teachers for their work, and made a stirring address to the Audubon Societies to work together to better the laws as well as to see that they were enforced, and to inculcate the feeling that the bird belongs not to the individual but to the state.

The lateness of the hour prevented further discussion or consideration of the subjects of Federation and Coöperation, and upon motion of Mr. Chapman, who on behalf of the New York Society and American Museum of Natural History, invited the societies to meet in New York during the American Ornithologists' Congress in November, 1901, it was decided to appoint a committee whose duty it should be to formulate plans for the federation of the societies and to report at the Audubon Congress of 1901.

Death of Mrs. Dommerich

In the death of Mrs. C. F. Dommerich, which occurred in New York city, November 9, 1900, the cause of bird protection has lost a staunch and efficient supporter, who had chosen for her field of work a state where her services were greatly needed.

It was through Mrs. Dommerich's efforts that the Florida Audubon Society was formed in March, 1900. Under her leadership it promised to be an organization of more than usual influence, and it is sincerely to be hoped that in its ranks there is some one who will carry on the work which Mrs. Dommerich so successfully inaugurated.

Seizure of Gulls in Baltimore

Acting under advice received from the U. S. Biological Survey, the Game and Fish Commission of Maryland seized, in October last, 2,600 Gulls and Terns in the possession of Dumont & Co. of Baltimore. Under the provisions of the state law the birds were confiscated, no defense being made. A criminal case, to determine whether Dumont & Co. are liable to the fine imposed by the state law, of from \$1 to \$5 for each bird found in their possession, is still pending.

This case thoroughly aroused the wholesale feather dealers of Baltimore, who requested Dr. T. S. Palmer, of the Biological Survey, to examine their stock. As a result of this examination they promptly withdrew all prohibited feathers, including Grebes' breasts and Herons' aigrettes, and each firm made a statement to the effect that hereafter it would not deal in birds protected by state or federal law.

In this instance the state law covered the ground, but it is clearly much strengthened by the support of the Lacey bill, and it is evident that the section of this bill which makes a bird subject to the law of whatever state it chances to be in will, under Dr. Palmer's energetic administration, exert so restraining an influence on the trade in feathers that, fearing to involve their customers in legal difficulties, feather dealers will eventually abandon the use of the feathers of our native birds.

Reports of Societies

DISTRICT OF COLUMBIA SOCIETY

The annual meeting of the Society was the largest and most successful one ever held.

After the election of officers, and reports of treasurer, secretary, and committees, the secretary read a History of the Audubon Movement in America, beginning with an account of the original general Society, followed by the State Societies, in the order of their inception, and a concise history of each organization, its officers, membership, main objects, and most successful lines of work.

Mr. Harry Oberholser followed with 'Glimpses of Audubon,' an interesting talk about the famous naturalist, illustrated with a number of views of his first home in America, and pictures from his works.

Mr. Wood gave great pleasure and amusement by his clever imitations of the notes, calls and cries of "our friends in feathers and furs."

At this meeting it was announced that Mrs. George Colton Maynard's book, 'Birds of Washington and Vicinity,' had been adopted as a text-book in our public schools, 500 copies having been ordered for that purpose. A complete set of the publications up to date of each Society has been bound and placed in our free library, as well as a full set of the papers, reports, etc., of the Society in England for the Protection of Birds, very kindly given to us by its honorary secretary, Mrs. Lemon. Our collection of expensive books of reference placed in the library for the use of teachers and students grows each year, as does our membership.

One hundred bird specimens were bought, and used by individual students and by members to illustrate talks and lectures.

Classes for the study of birds were held by Dr. Palmer and Mr. Oberholser in the normal school during the spring.

In May, June and July, popular talks were given by Miss Elizabeth V. Brown

and Mr. Henry Olds, in Takoma and Garrett Park, suburbs of Washington.

In legislation we have made some progress, the Audubon Society, in coöperation with the Fish and Game Association, having prepared an amendment to the present game law, based upon the A. O. U. model bird law, and it has been favorably reported by the District Committee, both in the House and Senate. We have printed and circulated a portion of the existing District game laws.

There is no evidence, so far, of the sale in the markets of Robins as game birds, but the prevention of their sale requires eternal vigilance. Each year brings added encouragement, and we feel especially pleased that our efforts to have the study of birds hold a prominent place in the nature work of the schools has been entirely successful.

JEANIE MAURY PATTEN, *Secretary.*

The Destruction of Ptarmigan for Millinery Purposes

Our attention has been called to some unquestionably authentic, and hence unusually valuable statistics in regard to the destruction for millinery purposes of Ptarmigan or Willow Grouse in northern Russia, contained in 'A Russian Province of the North' by Alexander Platonovich Engelhardt, governor of the Province of Archangel (Lippincott, 1899).

Governor Engelhardt states that while

the birds' bodies are worth about one-half a cent each, their wings bring a cent and a half a pair, and to supply the feather dealers' unlimited demands, the birds are killed in such enormous numbers that a single shipment from Archangel, on August 17, 1898, consisted of *ten tons of wings!*

Among the tables in the appendix of this volume is one giving the government's record of game killed each year, from which it would appear that the active demand for the wings of Grouse or Ptarmigan began in 1894. Thus, we learn from this table that in 1893 there were recorded as killed 117,258 Willow and Hazel Grouse, but in 1894 the number was 428,094; in 1895, 412,802; in 1896, 652,530, and in 1897, 485,332. In four years, therefore, nearly 2,000,000 Grouse were recorded as killed in the single Province of Archangel—and doubtless many more were destroyed of which no record was made.

The continued destruction of these birds at this rate means their early extermination, when the inhabitants of this comparatively barren region will have been deprived of an important source of food supply, which, properly used, should prove exhaustless.

Sentiment aside, therefore, the destruction of Grouse in northern Russia for millinery purposes, raises a question in economics of the first importance.—F. M. C.



PTARMIGAN'S WING; WINTER PLUMAGE LENGTH 7-7½ IN.

Note the short outer first feather. In the Pigeon's wing the first three feathers are of about equal length.

AMNH LIBRARY



100102090

Bird-Lore

V

OCT 2 1928
FEB 8 1933
SI 7

