

TWO AND A HALF YEARS OF BIRD MIGRATION AT CLEMSON COLLEGE, S. C.

BY GEORGE E. HUDSON.

THE following tables contain migration data collected by the writer in the vicinity of Clemson College, S. C., during the period from February 1926 to June 1928.

In gathering these data about eight hundred specimens were collected, most of which are now in the collection of the Division of Entomology and Zoology of the Clemson Agricultural College of South Carolina.

In considering the fall migration table, it should be noted that in the case of the winter visitants, the date of arrival and date of departure for any one year are not for one continuous season; the date of arrival being for one season, and the date of departure for the preceding season.

Accounts of the capture of the more uncommon species occurring in this list have already been published in 'The Auk,' except in the case of the Bartramian Sandpiper, of which only one specimen was taken. The late Arthur T. Wayne informed me that this bird is becoming very rare in this part of the country, although he remembers when it was abundant at Mount Pleasant, S. C.

The capture of the Brewer's Blackbirds was reported by Sherman and the writer in 'The Auk,' October 1927. The Nashville, Wilson's, and Connecticut Warblers were reported by the writer in 'The Auk,' January 1928. This is the only authentic record of the Nashville Warbler for South Carolina.

Several typical specimens of Cairns' Warbler (*Dendroica caerulescens cairnsi*) were also taken, but as this sub-species could not be distinguished in life from the typical form, no effort was made to separate the dates of arrival and departure of the two. The validity of the form *cairnsi* is questioned by many ornithologists, and the distinguishing characters thought to be merely individual, instead of being of sub-specific importance.

The American Egret and Little Blue Heron cannot be considered as spring migrants, for they merely wander up from the coastal region after the breeding season.

The list of permanent residents is based on the writer's observations, and on information contained in works¹ on the birds of this region. Some of the species contained in this list are rather irregular in their occurrence, and do not breed, but may be expected at any season of the year; the Great Blue Heron is an example. The Broad-winged Hawk, Barn Owl, and Ruffed Grouse are included in this list on the authority of Prof. F. Sherman. The last named species occurs in this region only in the mountains, however.

This article makes no pretence of covering all of the species on record for this region, but only those recorded during the period mentioned. Observations were made only during the school year (September to June), hence dates of departure are wanting for the summer residents that leave early.

LIST OF PERMANENT RESIDENTS.

Wood Duck.	Phoebe.
Great Blue Heron.	Blue Jay.
King Rail.	Crow.
American Woodcock.	Starling.
Killdeer Plover.	Red-winged Blackbird.
Bobwhite.	Meadowlark.
Ruffed Grouse.	Purple Grackle.
Mourning Dove.	English Sparrow.
Turkey Vulture.	Goldfinch.
Black Vulture.	Grasshopper Sparrow.
Cooper's Hawk.	Field Sparrow.
Red-tailed Hawk.	Towhee.
Red-shouldered Hawk.	Cardinal.
Broad-winged Hawk.	Loggerhead Shrike.
Sparrow Hawk.	Pine Warbler.
Barn Owl.	Mockingbird.
Barred Owl.	Brown Thrasher.
Screech Owl.	Carolina Wren.
Belted Kingfisher.	Bewick's Wren.
Southern Hairy Woodpecker.	White-breasted Nuthatch.
Southern Downy Woodpecker.	Brown-headed Nuthatch.

¹ "Birds of South Carolina," by Arthur T. Wayne; and "Birds of North Carolina," by T. Gilbert Pearson, H. H. Brimley, and C. S. Brimley.

Pileated Woodpecker. Tufted Titmouse.
 Red-headed Woodpecker. Carolina Chickadee.
 Red-bellied Woodpecker. Robin.
 Flicker. Bluebird.

FALL MIGRATION AT CLEMSON COLLEGE, S. C., WITH EXTREME DATES OF ARRIVAL AND DEPARTURE.

Name of Bird	Earliest Date		Latest Date		
	1926	1927	1926	1927	1928
Grinnell's Water-Thrush	Sept. 13	Oct. 4	.....	.....	.....
Tennessee Warbler	Sept. 17	.....	Sept. 21	.....	.....
Chestnut-sided Warbler	Sept. 17	Sept. 20	Oct. 26	Oct. 15	.....
Magnolia Warbler	Sept. 18	Sept. 29	Oct. 12	Oct. 15	.....
Marsh Hawk	.....	Oct. 1 ¹	May 16	April 18 ¹	Mar. 16
Gray-cheeked Thrush	.....	Sept. 23	.....	Oct. 17	.....
Sharp-shinned Hawk	.....	Sept. 24	.....	April 27 ¹	April 24
Olive-backed Thrush	.....	Sept. 27	.....	Oct. 18	.....
Wilson's Thrush	.....	Sept. 29	.....	.....	.....
Rose-breasted Grosbeak	Oct. 2	Oct. 1	.....	Oct. 15	.....
Cedar Waxwing	Nov. 16	Oct. 7	May 27	May 25	May 25
Yellow-bellied Sapsucker	Oct. 9	Oct. 13	.....	Mar. 30	April 3
Palm Warbler	Oct. 9	.....	.....	April 27	.....
Black-throated Blue Warbler	Oct. 17	Oct. 11	Oct. 30	Oct. 17	.....
Brown Creeper	Oct. 30	Oct. 11	.....	Mar. 6	April 8
Savannah Sparrow	Nov. 2	Oct. 13	Mar. 13	April 29	April 24
Ruby-crowned Kinglet	Nov. 20	Oct. 13	April 21	April 21	April 24
Black-throated Green Warbler	.....	Oct. 14	.....	.....	.....
Winter Wren	Oct. 30	Oct. 14	.....	April 11	April 24
White-throated Sparrow	Oct. 17	Oct. 15	May 16	May 1	May 15
Song Sparrow	Oct. 26	Oct. 15	.....	April 23	.....
Myrtle Warbler	Oct. 25	Oct. 15	April 21	April 27	May 10
House Wren	Oct. 17	.....	.....	.....	.....
Golden-crowned Kinglet	Oct. 26	Oct. 18	.....	Feb. 9	April 6
Hermit Thrush	Oct. 30	Oct. 18	April 28	April 25	April 17
Rusty Blackbird	Dec. 4	Oct. 19	.....	Dec. 13	.....
Vesper Sparrow	Nov. 17	Oct. 27	April 21	April 23	April 13
Coot	.....	Nov. 3	.....	.....	.....
Slate-colored Junco	Nov. 5	Nov. 6	April 21	April 11	April 13
Canada Goose	Nov. 17	Nov. 7	.....	Feb. 18	.....
Mallard Duck	Dec. 11	Nov. 11	.....	Feb. 24	April 18 ¹
American Pipit	Nov. 16	Nov. 9	Mar. 13	April 15	Mar. 9
Lesser Scaup Duck	Nov. 16	.....	Dec. 7	.....	.....
Fox Sparrow	Dec. 11	Nov. 23	Feb. 20	Mar. 14	Mar. 29
Purple Grackle	Nov. 23	Nov. 2	Mar. 13	May 9 ¹	Mar. 29
Bronzed Grackle	Nov. 27	.....	Mar. 13	.....	.....
Brewer's Blackbird	Dec. 18	.....	April 17 ¹	.....	.....

¹ (By Prof. F. Sherman).

SPRING MIGRATION AT CLEMSON COLLEGE, S. C., WITH EXTREME DATES OF ARRIVAL AND DEPARTURE

Name of Bird	Earliest Noted			Latest Noted		
	1926	1927	1928	1926	1927	1928
Rusty Blackbird.....	.....	Feb. 12	Feb. 24	.....	Feb. 27	March 23
Cowbird.....	March 13	Feb. 25	March 2	.....	May 23	April 3
Wilson's Snipe.....	.....	March 2	March 13	April 21	April 7	March 29
Chipping Sparrow.....	March 13 ¹	March 17	March 28	.....	Nov. 10	.....
Rough-winged Swallow.....	April 10	April 6	March 16	.....	Oct. 11	.....
Black and White Warbler.....	March 20	March 19	March 28	Sept. 13	.....	.....
Orange-crowned Warbler.....	.....	.....	March 23	.....	Oct. 13	.....
Maryland Yellow-throat.....	.....	March 26	March 28	Oct. 2	.....	.....
Blue-gray Gnatcatcher.....	April 6 ¹	March 27	March 28	.....	.....	.....
Louisiana Water-Thrush.....	.....	April 6	March 28 ¹	.....	Oct. 29	.....
Mountain Solitary Vireo.....	.....	.....	March 29	.....	Sept. 15	.....
White-eyed Vireo.....	April 6 ¹	April 6	March 29	.....	.....	April 7 ¹
Coot.....	.....	.....	March 30	.....	.....	.....
Purple Martin.....	.....	.....	March 30	.....	.....	.....
Chimney Swift.....	April 10	April 5 ¹	April 2	Oct. 12	Oct. 16	.....
Hooded Warbler.....	April 10	April 6	April 3	Sept. 28	Oct. 15	.....
Black-throated Green Warbler.....	April 10	April 4 ¹	April 22 ^{1, 2}	April 27 ¹	.....	April 27 ^{1, 2}
Red-eyed Vireo.....	.....	April 6	April 17	Oct. 2	Oct. 11	.....
Yellow-throated Vireo.....	April 6 ¹	April 16	April 6	.....	.....	.....
Yellow Palm Warbler.....	.....	.....	April 6	.....	.....	April 7
Yellow-throated Warbler.....	.....	April 15	April 6	.....	.....	.....
Wood Thrush.....	April 11 ¹	April 6	April 12	Oct. 12	Oct. 15	.....
Spotted Sandpiper.....	April 21	April 13	April 7 ¹	May 15	May 21	April 24
Lesser Scaup Duck.....	.....	April 9	.....	.....	.....	.....
Whip-poor-will.....	April 21	April 9	May 1	Sept. 18 ¹	.....	.....
Parula Warbler.....	April 10	April 9	April 12	Sept. 28	Sept. 15	.....
Greater Yellow-legs.....	.....	April 10	.....	.....	April 12	.....

¹ (By Prof. F. Sherman)² (By Prof. H. A. Rankin)

SPRING MIGRATION—CONTINUED.

Name of Bird	Earliest Noted			Latest Noted		
	1926	1927	1928	1926	1927	1928
Ruby-throated Hummingbird.....	April 10 ¹	April 12	April 21	Sept. 14	Sept. 24	April 17
Grinnell's Water-Thrush.....	April 21	April 10	April 13	May 22	April 21	.....
Prairie Warbler.....	April 11 ²	April 11	April 17	Sept. 21	Sept. 13	.....
Redstart.....	April 21	April 14	April 17	Oct. 12	Oct. 1	.....
Green Heron.....	April 13 ¹	April 12	April 24	.....	Sept. 28	.....
Crested Flycatcher.....	April 13 ¹	April 13	April 20	.....	.....	.....
Ovenbird.....	.....	April 13	April 17	.....	Oct. 17	.....
Long-billed Marsh Wren.....	.....	April 13	.....	.....	April 25	.....
Red-breasted Nuthatch.....	.....	April 13	.....	.....	.....	.....
Summer Tanager.....	April 19 ¹	April 15	April 17	.....	Sept. 20	.....
Black-throated Blue Warbler.....	April 21	April 15	April 20	.....	May 9	May 15
Kingbird.....	April 21	April 17	May 4	.....	.....	.....
Scarlet Tanager.....	April 21 ¹	April 17	April 18 ^{1,2}	.....	May 12	May 15
Cape May Warbler.....	April 21 ¹	April 18	April 17	.....	May 17	May 15 ¹
Yellow Warbler.....	April 21	April 18 ¹	April 17	.....	.....	.....
Kentucky Warbler.....	.....	April 17	May 1	.....	.....	.....
Catbird.....	April 24	April 17	April 19	Sept. 28	Oct. 14	.....
House Wren.....	.....	April 17	April 17	.....	April 27	.....
Indigo Bunting.....	April 24	April 17	April 17	.....	Nov. 3	May 1
Yellow-breasted Chat.....	April 24	April 18 ¹	April 24	Oct. 17	.....	.....
Rose-breasted Grosbeak.....	April 19	April 18	April 24	May 4 ¹	May 2 ¹	May 11
Baltimore Oriole.....	.....	.....	May 1	.....	May 9	.....
Cliff Swallow.....	April 20 ¹	April 20	April 23	.....	.....	.....
Solitary Sandpiper.....	April 21	May 2	.....	May 15	.....	.....
Wood Pewee.....	.....	April 21	April 22 ²	Oct. 8	Oct. 11	.....
Worm-eating Warbler.....	May 1	April 21	April 22	Sept. 21	.....	.....
Cerulean Warbler.....	April 21 ¹	.....	.....	.....	.....	.....

² (By Prof. H. A. Rankin)

¹ (By Prof. F. Sherman)

SPRING MIGRATION—CONTINUED.

Name of Bird	Earliest Noted			Latest Noted		
	1926	1927	1928	1926	1927	1928
Blackburnian Warbler.....	April 21	.....	April 24 ¹ 2	.....	May 11	April 27 ¹ 2
Olive-backed Thrush.....	April 21	May 4	May 1	May 3	May 20	May 15
Acadian Flycatcher.....	.....	May 2 ¹	April 22	.....	.....	.....
Orchard Oriole.....	May 4 ¹	April 23	April 22	.....	.....	.....
Black-poll Warbler.....	May 1	May 1	April 22	May 24	May 17	May 24
Barn Swallow.....	.....	April 23	May 1	.....	.....	May 12
Black-crowned Night Heron.....	April 24	.....	May 1	.....	.....	.....
Bartramian Sandpiper.....	.....	.....	April 24	.....	.....	.....
Bobolink.....	May 16	April 29	April 24	May 26	May 9 ¹	May 18
Blue Grosbeak.....	April 24	April 27 ¹	April 24	.....	.....	.....
Chestnut-sided Warbler.....	April 27 ¹	April 25	May 4	.....	May 17	May 15
Nashville Warbler.....	.....	April 27	April 27 ¹ 2	.....	.....	.....
Bay-breasted Warbler.....	May 16	May 9	.....	.....	.....	.....
Canadian Warbler.....	May 2	May 11	May 1	May 23	May 21	May 11
Gray-cheeked Thrush.....	.....	May 3	.....	.....	May 4	.....
Nighthawk.....	.....	May 6	May 5 ¹	Sept. 24	Oct. 9	.....
Yellow-billed Cuckoo.....	May 16	May 6	May 14	.....	Sept. 29	.....
Black-billed Cuckoo.....	May 17	May 6	May 15	.....	.....	.....
Wilson's Thrush.....	May 8	.....	.....	May 24	.....	.....
Magnolia Warbler.....	.....	May 9	May 11	.....	.....	.....
Wilson's Warbler.....	May 14	May 17	.....	.....	.....	.....
Chuck-wills-widow.....	.....	May 17	.....	.....	May 20	.....
Least Sandpiper.....	May 19	.....	.....	.....	.....	.....
Connecticut Warbler.....	.....	May 20	.....	May 27	.....	.....
Little Blue Heron.....	.....	July 4 ¹	.....	.....	.....	.....
American Egret.....	.....	July 27 ¹	.....	.....	.....	.....

¹ (By Prof. F. Sherman)² (By Prof. H. A. Rankin)