



The Raven

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DR. J. J. MURRAY, EDITOR
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Nos. 1 & 2

OBSERVATIONS OF RARE NORTHERN GULLS IN VIRGINIA

By Ludlow Griscom

On May 4, 1935, I crossed on the ferry from Cape Charles to Norfolk. As we were crawling slowly up the inner harbor towards the ferry slip, I was idly noting how relatively numerous the Herring Gulls were, and the high percentage of immatures, when a large Glaucous Gull crossed directly in front of the bow and lit on a nearby wharf piling, by the simple expedient of pushing off a Herring Gull. It was in the immature or first year plumage passing into the pure white stage. I have been thoroughly familiar with this striking gull for many years in the Northeast. The one at Norfolk was identifiable with the naked eye, although I had 8 power binoculars, and it was in plain sight for nearly three minutes. There is nothing particularly remarkable in the record, as this species had reached South Carolina and Florida, prior to this Virginia observation.

Much more recently I had a visit from my young friend William H. Drury, Jr., now in the Navy. He happened to mention that he had seen an Iceland Gull in Virginia, and I begged him to send me a detailed account of his observation, in the belief that it might have been unrecorded from the State. I might add that Mr. Drury is one of the most active and competent field observers in New England, he is well acquainted with the Iceland Gull as a regular winter visitor, and we have often seen the bird afield together. He has kindly sent me the following information from the southern Pacific. "You wanted me to send you my record of an Iceland Gull in Lynnhaven Roads, Thimble Shoal Channel, on Nov. 24, 1944. The bird was feeding on garbage dumped by ships in company with about 100 Herring Gulls, 20 Ring-billed Gulls, 15 Laughing Gulls. The bird was slightly smaller than the Herring Gulls, losing its buffy plumage, which was, however, still noticeable. The bill was dark. Flight was very light and buoyant - one of the best marks I think." There is nothing specially remarkable about this record either. Like its larger relative the Iceland Gull has been steadily increasing and extending its winter wanderings further south for 25 years. It has been recorded from North Carolina, and finding one in Virginia was just a question of time. Museum of Comparative Zoology, Cambridge, Mass

A NOTE ON THE WESTERN WILLET

By John H. Grey, Jr.

For some reason the Western Willet (Catoptrophorus semipalmatus inornatus) has not been listed from Virginia. This may be due to the fact that most of the collecting along our coast has been during the spring migration when these birds migrate northward by a more westerly route.

August 21, 1940, I collected two birds at Sand Bridge in Princess Anne County, above Back Bay, which proved to be this form. Both birds were adults: the female being larger with a wing of 217mm., that of the male measuring 214 mm., both of these being above the average of the Eastern Willet (C. S. semipalmatus) which is given by Chapman as 204 mm. When compared with a skin of semipalmatus these two birds were much paler in color.

As a general rule the willets on the Atlantic Coast in fall are taken to be inornatus, with a few semipalmatus sprinkled in. The day the above were collected Mrs. A. C. Reed and I saw thirty birds, and felt sure that at least twenty of them were the western form; about some of the others we were not sure. During August 9-13, 1944, J. J. Murray and I stayed at Back Bay where we were joined by Locke L. MacKenzie; seeing up to thirty willets a day, but did not list any of them as definitely semipalmatus. Other observations seem to add weight to the general idea that the bulk of our fall migrants are inornatus.

August 30, 1939, I took a male semipalmatus on Chesapeake Bay about one mile above Little Creek. All three skins are in the North Carolina State Museum at Raleigh.

Charlottesville, Va.

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BIRD STUDY AT MOUNTAIN LAKE

By D. Ralph Hostetter

The Mountain Lake Biological Station, operated by the University of Virginia, is located in an area which offers a rich field and great opportunities to the student of birds and bird life. This was again vividly brought to my attention during the summer of 1944 while conducting a five-weeks course in Field Ornithology. Within a short period of time it is possible to descend from an elevation of 4300 feet (Bald Knob) to an elevation of 1800 feet (Sinking Creek). This affords one the privilege of studying the altitudinal distribution of birds, a fascinating phase of bird study.

The following observations were made in the period between June 26 and July 29, and included the area two and one-half miles north of the Station to the V. P. I. reservation buildings; eight miles southeast to Newport; and one trip was made to Pembroke and Pearisburg, nine and twenty-one miles to the southwest respectively. All observations were made on foot, but transportation was used to take the group to some of the distant points.

The following 84 species were studied during the course. The species are listed according to the highest elevation at which they were observed, and too much significance should not be given to this manner of presentation. No attempt was made to determine the upper and lower altitudinal limits for the species. A number of representatives such as Turkey Vulture, Goldfinch and Towhee may be observed at practically all elevations.

Approximately 4300 feet: Turkey Vulture, Carolina Chickadee, Catbird, Brown Thrasher, Cedar Waxwing, Maryland Yellow-throat, Red-eyed Towhee, Carolina Junco.

Approximately 3800 feet: Eastern Ruffed Grouse, Cooper's Hawk, Eastern Mourning Dove, Northern Barred Owl, Eastern Whip-poor-will, Chimney Swift, Ruby-throated Hummingbird, Northern Flicker, Eastern Hairy Woodpecker, Northern Crested Flycatcher, Eastern Phoebe, Least Flycatcher, Eastern Wood Pewee, Blue Jay, Crow, Tufted Titmouse, Northern White-breasted Nuthatch, Eastern and Southern Robins, Wood Thrush, Veery, Mountain Vireo, Bland and White Warbler, Cairns's Warbler, Chestnut-sided Warbler, Ovenbird, Canada Warbler, Scarlet Tanager, Rose-breasted Grosbeak, Indigo Bunting, Eastern Chipping Sparrow.

Approximately 3500 feet: Duck Hawk, Yellow-bellied sapsucker, Northern Downy Woodpecker, Bewick's Wren, Red-eyed Vireo, Eastern Cardinal.

Approximately 3100 feet: Bob-white, Northern Raven, Parula Warbler, Yellow-throated Warbler (?).

Approximately 2900 feet: Louisiana Water-thrush.

Approximately 2400 feet: Eastern Sparrow Hawk, Yellow-billed Cuckoo, Eastern Mockingbird, Eastern Bluebird, Starling, Yellow-breasted Chat, English Sparrow, Eastern Meadowlark, Baltimore Oriole, Purple Grackle, Eastern Goldfinch, Eastern Grasshopper Sparrow, Eastern Vesper Sparrow, Eastern Field Sparrow, Eastern Song Sparrow.

Approximately 2000 feet: Eastern Kingbird, Blue-gray Gnatcatcher, Eastern Yellow Warbler, American Redstart.

Approximately 1800 feet: Sharp-shinned Hawk, Eastern Belted Kingfisher, Bank Swallow, Barn Swallow, Purple Martin, Carolina Wren, Yellow-throated Vireo, Worm-eating Warbler, Eastern Cowbird.

Approximately 1600 Feet: American Egret, Eastern Green Heron, Eastern Red-tailed Hawk, Spotted Sandpiper, Eastern House Wren, East-Red-winged Blackbird.

Dates of nests containing eggs or young are as follows: 6/26: Phoebe (3 young), Catbird (2 eggs), Mountain Vireo (1 egg); 6/27: Ovenbird (4 eggs), Towhee (4 eggs); 6/28: Mountain Vireo (3 young), 6/29: Towhee (4 young); 7/4: Rubythroated Hummingbird (? eggs), Carolina Junco (4 young); 7/5: Bluebird (? young), Indigo Bunting (2 young); 7/6: Phoebe (3 young); 7/7: Phoebe (2 young), Bewick's Wren (?young); 7/15: Carolina Junco (3 young); 7/17: Red-eyed Vireo (2 young); 7/24: Indigo Bunting (2 young).

A very interesting study was made of four young Cooper's Hawks which were hatched and raised several hundred yards north of the Station. The nest could not be located, but it apparently was in the vicinity of the Station. For several weeks the screaming fledglings were

fed by the adults. The young, on seeing the approach of the parents, would rush out to catch with their talons the food which was dropped from the talons of the adults at a distance of about 15 feet above the young hawks. After various attempts at baiting and snaring, Dr. Robert K. Burns, was successful in capturing one of the young hawks, which he hoped to train for the sport of falconry. After some very interesting experiences and observations, the hawk was released not, as Dr. Burns said, because of discouragement but because of lack of time for training and suitable housing space. It is hoped that the nest of this interesting hawk, containing eggs or young, will be found in the same area this spring.

Eastern Mennonite School
Harrisonburg, Va.

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DUCKS NEAR DAYTON, VIRGINIA

Dayton, a small town about six and one-half miles south of Harrisonburg, is fortunate in having on its outskirts a large body of water known as Silver Lake. This town is still more fortunate in having among its citizens those who are interested in protecting and feeding the hundreds of ducks which spend the winter there. It is not uncommon to find several hundred birds on the lake at one time representing grebes, coots, and eight or nine species of ducks.

On December 26 there were about 200 birds on the lake, fewer than usual. The species and number were approximately as follows: Horned Grebe, 6; Mallard, 100 (estimated); Baldpate, 36; Pintail, 20; Scaup Duck, 40; Ruddy Duck, 1; Coot, 15.

D. Ralph Hostetter

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NOTES ON BIRDS AT EMORY, NOVEMBER 1 to JANUARY 31.

The outstanding meteorological event of the period was the low temperature and heavy snow of early and middle December. The lowest official temperature was zero. The snow, averaging about one foot in depth, remained on the ground for two weeks or more.

The full effects of this severe weather on bird life are difficult to determine, as some species are still migrating southward in early December, which fact could account for their total absence or reduced numbers since the cold spell. It does not, however, account for a 50% decrease in the density of the Carolina Wren, and may not entirely account for the complete absence of the Hermit Thrush. The full effects, however, can be better appraised after the bird life here has been studied in subsequent winters.

The most unusual species seen during the winter was a Migrant Shrike found near Bristol on January 12. (A Ruby-crowned Kinglet,

seen on November 25, but never since then, was regarded as a late migrant.)

The beginning of the spring migration was marked by the appearance of a Robin on the Emory and Henry Campus, January 15. The only other arrival recorded to date was a Grackle, on January 31.

A Christmas bird count on December 30, contained 40 species and 619 individuals, including 2 Phoebes.

Henry M. Stevenson, Jr.
Emory, Virginia.

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THE 1944 CHRISTMAS CENSUS IN VIRGINIA

Back Bay, Va. (Back Bay Fish and Wildlife Refuge) and Knott's Island, N. C. (fresh pond, salt pond, fields, woodlands, marshes, wash flat, beach, swampy bottom lands. Pungo, Va. to Williams landing, along route 625. Also route 615 to cause way to Knott's Island, north end of island, and back to Sands Bridge, Along ocean beach to Little Island Coast Guard Station, thence inner road to Back Bay Fish and Wildlife Service Refuge Headquarters. Thence to south end of refuge along inner road, and to wash flats. Back on beach to Little Island Coast Guard Station, and inner road to Sand Bridge; march 40%, fresh water ponds 14%, wash flats 13%, fields 13%, beach 8%, woodland 7%, swampy bottom lands 5%). Dec. 31; dawn to dusk. Cloudy, with misting rain late; temp: - 36° - 42° F.; wind SE to E, 8-17 m.p.h.; no snow; water on wash flats. Nine observers (one additional in afternoon) in two parties. Total hours, 15½ (11 on foot, 4½ in car and truck; total miles, 45 (11 on foot, 34 by truck or car). Common loon, 8; Holboell's grebe, 1; (just beyond surf - Mrs. A. C. R., L. L. M.); horned grebe, 1; pied-billed grebe, 6; double-crested cormorant, 2; great blue heron, 3; American bittern, 2; whistling swan, 92; Canada goose, 1500 (est.); greater snow goose, 10,000 (est.); blue goose, 4 (with snow - Mrs. A. C. R., T.E.R.); black duck, 5; baldpate, 18; pintail, 87; wood duck, 1; redhead 18; canvasback, 10; American golden-eye, 1; white-winged scoter, 31; surf scoter, 2; ruddy duck, 2; red-breasted merganser, 1; turkey vulture, 8; Cooper's Hawk, 1; red-shouldered hawk, 2; bald eagle, 3; marsh hawk, 11; sparrow hawk, 6; king rail, 1; clapper rail, 3; coot, 600 (est.); killdeer, 3; Wilson's snipe, 2; sanderling, 46; great black-backed gull, 5; herring gull, 108; ring-billed gull, 181; black skimmer, 3; (dovekie, 2 - both dead, fresh, slightly oiled; one found 28 Dec., the other to-day on wash flats nearly a mile from ocean. mourning dove, 4; great horned owl, 1; short-eared owl, 1; kingfisher, 5; flicker, 5; pileated woodpecker, 1; red-bellied woodpecker, 7; yellow-bellied sapsucker, 1; downy woodpecker, 2; horned lark (prairie? 12; eastern crow, 97; fish crow, 3; Carolina chickadee, 1; tufted titmouse, 16; white-breasted nuthatch, 1; brown creeper, 1; Carolina wren, 10; short-billed marsh wren, 10; mockingbird, 19; catbird, 2; bluebird, 22; golden-crowned kinglet, 17; ruby-crowned kinglet, 2; American pipit, 39; shrike (loggerhead?), 1 (ver rare here, studied at close range - Mrs. A.C.R.); starling, 32; myrtle warbler, 73; pine warbler, 2;

English Sparrow, 37; meadowlark, 112; red-wing, 1893 (partially est.); boat-tailed grackle, 14; cardinal, 8; towhee, 2; Ipswich sparrow, 1 (E.L.W., seen at close range in dunes); Savannah sparrow, 36; sharp-tailed sparrow, 2; slate-colored junco, 2; field sparrow, 6; white-throated sparrow, 25; swamp sparrow, 24; song sparrow, 60. Total: 80 species; 15,387 individuals. (Count on ducks unusually small due to inability to get out on Back Bay in boat.) Dr. Locke L. Mackenzie, Mrs. St. J. R. Marshall, Jack E. Perkins, Virginia B. Pickell, Mr. & Mrs. A. C. Reed, Dr. and Mrs. T. E. Reynolds, and Gordon E. Reynolds, Dr. Earl L. White.

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Henrico Co., Va. (north and west parts of Richmond including Bryan and Byrd Parks and James River opposite Windsor farms; city dock; Curles Neck Farm; open farmland 30%, pine woods 2½%, deciduous woodlands 20%, city suburbs 17½%, open grassy fields 5%, open water 17½%, tidal fresh water marshes 7½%). Dec. 29; dawn to dusk. Overcast, with snowfall from 1 p.m. on, changing to sleet about 4 p.m.; wind NW veering to NE, 8-12 m.p.h.; temp. 30° - 32° F.; ground bare, water open. Three observers in 2 parties in a.m., seven in 1 party in p.m. Total hours, 10 on foot. Total miles, 9 on foot. Horned grebe, 2; Canada goose, 408; mallard, 10; black duck, 27; baldpate, 37; wood duck, 4; redhead, 4; ring-necked duck, 88; ruddy duck 2; American Merganser, 17; turkey vulture, 1; Cooper's hawk, 1; red-tailed hawk, 2; marsh hawk, 1; sparrow hawk, 1; coot, 194; killdeer, 16; Wilson's snipe, 14; herring gull, 30; ring-billed gull, 121; mourning dove, 109; kingfisher, 2; flicker, 3; red-bellied woodpecker, 2; hairy woodpecker, 1; downy woodpecker, 13; phoebe (seen distinctly by all seven observers), 1; prairie horned lark, 120; blue jay, 6; crow, 162; Carolina chickadee, 7; tufted titmouse, 4; white-breasted nuthatch, 5; brown creeper, 3; Carolina wren, 10; mockingbird, 7; bluebird, 4; golden-crowned kinglet, 7; starling, 62; house sparrow, 81; meadowlark, 25; red-wing, 34; rusty blackbird (carefully identified by all observers), 60; cardinal, 51; purple finch, 5; goldfinch, 16; towhee, 2; Savannah sparrow, 8; junco, 156; field sparrow, 3; white-throated sparrow, 129; song sparrow, 13. Total, 62 species; about 2089 individuals. (Seen in area Dec. 26: great blue heron, 1; ruby-crowned kinglet, 1; myrtle warbler, 8.) -- J. R. Sydnor, Mrs. C. W. Darden, Mr. & Mrs. C. E. Smith, Muriel White, J. B. Loughran, F. R. Scott.

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Charlottesville, Va. (South Fork Rivanna River from Rt. 29 to R. R. bridge, Rio Swamp, McIntyre Park, C & O Railway right of way in City. River banks 45%, deciduous woods 45%, and pine woods 5%, swamp 5%). December 27. Dawn to mid-afternoon. Cloudy at start, changing to sleet storm 10:30 A. M. continuing rest of day; no wind. 18° - 26°. Five observers, two parties on foot: 8 hours, 8 miles. Mourning dove, 40; screech owl, 1; flicker, 1; red-bellied woodpecker, 1; yellow-bellied sapsucker, 1; hairy woodpecker, 1; downy woodpecker, 7; blue jay, 16; crow, 81; chickadee, 10; tufted titmouse, 4; white-breasted nuthatch, 2; brown creeper, 1; Carolina wren, 12; mockingbird, 4; hermit thrush, 2; bluebird, 14; golden-crowned kinglet, 2; ruby-crowned king-

let, 1; starling, 2; English sparrow, 30; red-wing, 50; cardinal, 23; purple finch, 18; goldfinch, 27; junco, 121; tree sparrow, 20; field sparrow, 30; white-throated sparrow, 5; fox sparrow, 20; song sparrow, 35. Totals: 31 species, 630 individuals. Mr. & Mrs. Warren Cloud, James Irvine, Gordon Lewis, and John Grey.

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Lynchburg, Va. (Timber Lake, Tomahawk Swamp and Graves' Mill; Tomahawk Creek and College Lake omitted, as former participants are in service; deciduous woods, 38%; fields and pastures, 62%.) Dec. 29; 8:20 A.M. to 12:30 P.M., 2:20 to 5:30 P.M. Overcast, snow showers in A.M., ice pellets and freezing drizzle in p.m.; wind E, 1-7 m.p.h.; temp. 33°--31° F.; light crust of ice and snow on ground, water open. One party in a.m., two parties for one hour in p.m., one party for rest of time. Total hours, 8 1/3 (8 on foot, 20 minutes in car; total miles, 15 (9 on foot, 6 by car). Hooded merganser, 2; turkey vulture, 5; black vulture, 14; bob-white, 7; mourning dove, 32; kingfisher, 1; flicker, 13; pileated woodpecker, 1; red-bellied woodpecker, 2; yellow-bellied sapsucker, 4; hairy woodpecker, 1; downy woodpecker, 11; prairie horned lark, 13; blue jay, 3; crow, 28; chickadee, 20; tufted titmouse, 14; white-breasted nuthatch, 3; brown creeper, 1; winter wren 1; Carolina wren, 9; mockingbird, 2; robin, 5; hermit thrush, 3; bluebird, 3; starling, 8; myrtle warbler, 5; English sparrow, 60 (est.); cardinal, 21; purple finch, 4; goldfinch, 14; junco, 287 (partly est.); tree sparrow, 7; field sparrow, 13; white-throated sparrow, 29; song sparrow, 7. Total, 36 species; about 553 individuals. -- Mrs. C. L. Burgess, Jane Freer, Ruskin S. Freer, Lt. Wm. McIntosh, James Sprunt, Mr. & Mrs. J. W. Wiltshire, Jr. (Lynchburg Chapter, Virginia Society of Ornithology.)

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Triplet, Va. (In southeastern Brunswick County.) Start at 8:10 a.m. Cloudy, no wind, temp. at start 31°. Sun shone part of time between 10:25 and 11:40 A.M. (Ground covered same as in previous years; through fields and pasture lands north to Whiteoak Creek, up creek 1 1/2 miles, then south through fields and woods to Rattlesnake Creek, down creek and through fields and woods back home.) Observer alone. Turkey vulture, 2; mourning dove, 4; flicker, 2; pileated woodpecker, 1; red-bellied woodpecker, 1; sapsucker, 1; hairy woodpecker, 1; downy woodpecker, 2; blue jay, 2; crow, 14; chickadee, 6; tufted titmouse, 1; Carolina wren, 8; mockingbird, 2; robin, 2; hermit thrush, 1; bluebird, 11; golden-crowned kinglet, 2; shrike, (probably migrans), 3; meadowlark, 67; cardinal, 4; goldfinch, 2; towhee, 1; Savannah sparrow, 8; junco, 45; white-throated sparrow, 2; song sparrow, 2. Total: 27 species, 197 individuals.

Several species of birds seem to be scarce this winter. Only one cardinal was seen while on the field trip, the other three being seen on the feeding tray at home. In previous years the count of cardinals has averaged above 8. John B. Lewis.

Naruna, Va. December 25. Birds seen around my home. Damp and cloudy, some sky to be seen. Warmer than usual. Cardinal, 5; blue-bird, 5; mockingbird, 1; blue jay, 3; flicker, 1; downy woodpecker, 1; crow, 1; starling, 6; turkey vulture, 1; English sparrow, 25; song sparrow, 25; meadowlark are very scarce here this winter, but I heard one singing on Jan. 12, and 5th. A red-headed woodpecker is also wintering here. Bertha Daniel.

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Harrisonburg, Va. The area covered extended from Waterman Wood, one mile west of Harrisonburg, to Tide Spring, fifteen miles north of Harrisonburg. Area included pasture and farming land, one small woodlot of mixed Red Cedar and Oaks with a small stream, one woodlot of White Oaks and another of Red Cedar, Oaks, Persimmons and considerable underbrush. Three observers working together; eight miles on foot and eighteen miles by auto on roads. Start 10:50 A.M.; cold north wind, thin ice on ponds and puddles, snow lying on northern slopes of fields and roadsides; sky clear with few fleecy clouds scattered about; temp. 34°. temp. at noon, 38°; finish 3:00 P.M.; temp. 38°. Turkey vulture, 68; sparrow hawk, 1; pileated woodpecker, 1; yellow-bellied sapsucker, 1; downy woodpecker, 2; crow, 73; chickadee, 4; tufted titmouse, 15; white-breasted nuthatch, 4; mockingbird, 2; bluebird, 2; starling, 132 (estimated in part); English sparrow, 27; cardinal, 15; goldfinch, 1; junco, 14; tree sparrow, 16; white-throated sparrow, 20. Total: 18 species; individuals, 398. D. Ralph Hostetter, Mrs. Hostetter, Elizabeth L. Hostetter.

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Lexington, Va. (Practically same area as in former years: center of town to point 7 miles north; cedar woods, 35%; farmland 20%; scrub, 15%; oak woods, 10%; town edge, 10%; Big Spring Pond, 10%). Dec. 26. 8:30 to 5:30, hour out for lunch. Cloudy in A.M., clear in P.M.; temp. 42° -- 38°; wind, N - A. M. 20 m.p.h. P.M., 5 m.p.h.; spots of old snow; water mostly open. Observers together, writer and 3 others all day, 1 extra in A.M., 2 in P.M. Total hours, 8 (1 in car, 7 on foot); total miles, 33 (27 in car, 6 on foot). Horned grebe, 1 (picked up, freshly killed); pied-billed grebe, 1; mallard, 12; black duck, 11; green-winged teal, 2; turkey vulture, 36; black vulture, 63; sharp-shinned hawk, 1; sparrow hawk, 3; Wilson's snipe, 3; bob-white, 17; rock dove, 24; mourning dove, 18; kingfisher, 1; flicker, 6; pileated woodpecker, 1; red-bellied woodpecker, 2; downy woodpecker, 1; yellow-bellied sapsucker, 2; prairie horned lark, 1 (heard flying over); blue jay, 1; crow, 70; black-capped chickadee, 2 (seen and heard at close range; occurs regularly in winter - J. J. M.); Carolina chickadee, 10; tufted titmouse 15; white-breasted nuthatch, 1; winter wren, 1; Carolina wren, 3; mockingbird, 4; bluebird, 33; shrike, 1; starling, 278; myrtle warbler, 20; English sparrow, 76; meadowlark, 3; cardinal, 47; goldfinch, 46; junco, 18; tree sparrow, 53; field sparrow, 10; white-throated sparrow, 49; song sparrow, 3. Total, 42 species; 1035 individuals. J. J. Murray, Robert P. Carroll, Bobby Paxton, Jimmy Murray, Gordon Echols (morning), Alice Carroll (afternoon), and Jane Murray (afternoon).

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Roanoke, Va. (edge of city and old Lynchburg Road to Murray's Pond; fields, orchards, wood; returning on Peters Creek Road.) Dec. 31; 9:30 A.M. to 4:P. M. Cloudy; no wind; ground partly covered with snow; temp. 32° at start 30° at finish. Total 23 miles (18 by car, 5 on foot.) Turkey vulture, 3; Cooper's hawk, 2; sparrow hawk, 1; killdeer, 5; mourning dove, 5; downy woodpecker, 3; least flycatcher, 1; blue jay, 2; crow, 60; chickadee, 5; tufted titmouse, 2; brown creeper, 1; winter wren, 1; Carolina Wren, 1; mocking bird, 4; bluebird, 6; golden-crowned kinglet, 1; shrike, 1; starling, 200 (est.); English sparrow, 12; meadowlark, 2; cardinal, 9; purple finch, 1; goldfinch, 4; junco, 40; tree sparrow, 59; field sparrow, 2; white-crowned sparrow, 18; white-throated sparrow, 2; song sparrow, 12. Total: 30 species; 464 individuals. (28 horned larks were seen in open pasture December 24. Robins several times during month.) A. O. English.

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Emory, Va. (Washington Co.) (fields and woods north of town in A. M.; P. M. trip included area southeast of Emory: Middle and South Forks of Hobston River, slopes of Whitetop Mt., area around Damascus; about 1700 to 4000 ft.; deciduous woods, 25%; evergreen woods (pine, hemlock, red cedar), 15%; suburban districts, 10%; open fields, 50%). Dec. 30; 7:05 to 11:40 A. M.; 1:20 to 6:15 P. M. Cloudy and foggy all morning, partly cloudy in P.M. with shower at close; patches of snow on protected slopes (low temperatures and one heavy snow have characterized the month); wind SE to SW, 0-5 m.p.h.; temp. 34° to 47°. Observers usually together (R.P. and R.B.S. present in p.m. only.) Total hours, 7 on foot, 1 by car; total miles, 8 on foot, 20 by car. Great blue heron, 1; black duck, 2; American merganser, 3; turkey vulture, 15; black vulture, 7; sparrow hawk, 3; mourning dove, 67; great horned owl, 1; belted kingfisher, 2; flicker, 1; pileated woodpecker, 1; red-bellied woodpecker, 3; yellow-bellied sapsucker, 1; hairy woodpecker, 2; downy woodpecker, 5; phoebe, 2; horned lark, 16; blue jay, 35; crow, 45; Carolina chickadee, 10; tufted titmouse, 19; white-breasted nuthatch, 10; Carolina wren, 6; mockingbird, 6; bluebird, 19; golden-crowned kinglet, 3; cedar waxwing, 15; starling, 50; myrtle warbler, 2; English sparrow, 80; meadowlark, 25; cardinal, 22; goldfinch, 50; towhee, 1; junco, 35; tree sparrow, 5; field sparrow, 20; white-crowned sparrow, 10; white-throated sparrow, 7; song sparrow, 13. Total: 40 species; about 619 individuals. (Seen within preceding week: red-tailed hawk, killdeer, screech owl, purple finch. Inclement weather partly accounted for our failure to find brown creeper, winter wren hermit thrush, etc.)---Lt. Ernest P. Edwards, Robert Paasch, Henry M. Stevenson, Rosa Belle Stevenson.

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No. 3 & 4

THE FAUNAL ZONES OF THE SOUTHERN APPALACHIANS*

By J. J. Murray

One fine June morning some years ago three bird enthusiasts set out to climb Thunder Hill Mountain in the Blue Ridge of Rockbridge County, Virginia. We had two things in mind that early summer morning. In addition to the simple enjoyment of the multitude of mountain birds, with their appeal of color, song, and moving grace, we proposed to make a survey of the changes in their distribution from the valley along the waters of the James to the rocky knob where at 4,000 feet Thunder Hill shouldered to the sky. This climb presents in five and a half miles of air line an amazing change in altitude of 3,250 feet.

By the time the sun begins to show over Piney and High Cock we are well on our way, field glasses slung about our necks and note books ready for the first entries. Birds have been busy since four o'clock but the first slanting rays of sunlight put new vigor into the morning chorus. In the wet thickets along Arnold's Creek the Red-winged Blackbirds, as if knowing that there is no more striking combination than a touch of color on plain black, are flashing scarlet epaulettes of their sober mates and singing a sweet, gurgling "conkaree". Cardinals, the bit of black on their faces heightening rather than dimming the brilliance of the rosy plumage, are chanting their hymns to the sun, while their females, dressed more quietly but no less attractively in ashes of roses, appreciatively watch them. From every thicket comes the lilt of a Song Sparrow, and from every brush pile the ringing 'teakettle, teakettle, teakettle' of a Carolina Wren. In a maple in a cabin yard a Yellow Warbler sings, 'sweet, sweet, sweet, sweeter than the sweet'. On a dry hillside a Yellow-breasted Chat, clown of the bird world, is putting on a performance of shrieks and groans and whistles and cat-calls. Time would fail to tell of all the birds of the open valley country--sober Robins with brick-red breasts, Wood Thrushes and Indigo Buntings, respectable Towhees in black and brown and white, and, along the creek, Acadian Flycatchers and Louisiana Water-thrushes.

We pass Camp Powhatan and turn into the woods and up the mountain.

At this point the altitude is about 1,200 feet. At once there is a change in the bird life. Naturally we leave behind the Red-winged Blackbirds of the marshy glades and the Song Sparrow of the thickets. We are in the woods now, and those are birds of the open. Naturally, too, we meet the woods birds, the Red-eyed Vireo, the Hooded Warbler, the Black and White Warbler and others. We would have seen them down in Arnold's Valley, if we had turned aside into the forest. But another factor seems also to operate. We are beginning to climb now; and altitude seems to make a great difference. As we reach the 1,500 foot level the change is very noticeable. There are no Acadian Flycatchers or Louisiana Water-thrushes along the stream. We rarely see a Cardinal now. Some of our valley birds are still with us. Four of the most common--Indigo Bunting, Towhee, Brown Thrasher, and Ovenbird--will stay with us all the way to summit. Two other common friends--Wood-Thrush and Red-eyed Vireo--will be with us nearly all the way. On still another the Hooded Warbler we can count for a thousand feet yet. To make up for our friends which do not have the stamina for this rough mountain country we now begin to make new acquaintances. As we step out into a little opening at the top of a cliff, where we can hear the tumbling stream far below and where we can smell the aromatic fragrance of the hemlocks, there comes from one of the evergreens a lazy, drawling song, 'zee, zee, zee, zu, zee'. It is a little Black-throated Green Warbler, with yellow head, black throat, and greenish-yellow back. Suddenly a movement catches our eyes. We look up and there, balancing on the topmost twig of a hemlock tree, is one of the most vivid of all birds, a Scarlet Tanager. He begins to sing, a loud, rather sharp and somewhat monotonous warble. The sight of that bird, brilliant scarlet but for black wings and tail, singing in the bright sunlight at the top of the evergreen none of us will ever forget.

Now we plunge into the cool, dark woods again. The trail, worn by many generations of mountaineer feet, is sunk deep between rocky, fern-covered banks. We turn aside for a few minutes to rest and to drink at Hunting Spring, where the cold water pours out from the roots of a giant dead chestnut and makes a pool almost big enough to bathe in. In places the trees thin out overhead to drop great blotches of sunlight on the trail. At such sunny spots birds are more common. At 2,000 feet we walk out into one of the loveliest spots in all this mountain country. A little stream that has just come rushing down from Petite's Gap is quiet here as it enters a level reach. There is just fall enough to make the water bubble about the bit rocks and not too much for quiet pools where a pair of Wood Thrushes can bathe while they watch the nest in a nearby maple. Under the big hemlocks in the glade where a hundred men might camp there is a cathedral dimness and on the thick carpet of needles no footstep can be heard. The little stream plays a subdued air while a dozen different bird songs weave an obligato overhead. New friends appear in the trees. Just overhead is the sharply inquiring but attractive warble of the Mountain Vireo, 'Yes; Who are you; why are you here; what do you want?' We are now at the place on this trail where the rhododendron begins to appear, and so we now hear the song of the Cairn's Warbler the southern mountain race of the Black-throated Blue Warbler of the north. The song is energetic enough in the words of our translation, 'buzzy-as-a-bee', but its lazy quality denies the words. More beautiful still is the sight of a Blackburnian Warbler, black and white, with flaming orange throat and breast. He is perched on a high branch of a

dead chestnut tree, and, like the Tanager below, in bright sunshine.

We should like to spend the morning in this temple of the out-of-doors, but there is a long way to go and the hardest part of the trip is just before us. We climb the steep half-mile from the stream to Petite's Gap, turn to the right at the young white pine grove, and then begin the hard scramble through the brush to the shoulder of the big mountain. We have not left the gap before we add to our list the Rose-breasted Grosbeak, one of the finest of the mountain birds. The color combination is striking. Head, back and wings are black, but the spread black wings show large patches of white. Between the black head and the white lower breast is a rosy patch, from the center of which like dripping blood a streak of rose runs into the white below. The song is as notable as the plumage, a brilliant warble, intricate and beautiful and strong enough to be heard a quarter of a mile across a mountain hollow. Above here, probably because of the absence of evergreens, the Black-throated Green Warbler is scarce. The Hooded Warbler, too, is much less common now. The Cairn's and Blackburnian Warblers from here on are abundant.

At 3,000 feet we stop again, not only because it is lunch time and we need a rest, but because we cannot resist the beauty that halts us at a turn in the trail. Here the trees are larger and the shade more dense. Here the trail widens and nature has paved it with flat stones. Here a tiny spring breaks from a pile of moss-covered rocks and spreads by the path into a pool where glints of blue sky are reflected when the branches above open in the breeze and where the little creatures of the forest come to drink. And here all about us the rose-colored rhododendron is now in full bloom. We forget that we are trying to make a scientific study, and for an hour we sit and eat and rest and enjoy the beauty of foliage and color and song. Directly, from a tangle of rhododendron we hear a new song, light, tinkling, very intricate, very sweet. We sit perfectly still, while a little Canada Warbler comes out to the spring to drink and to bathe. During migrations this bird can be seen almost anywhere, but in June when all Canada Warblers are nesting it would never be found much below the altitude of this spring.

Finally, a mile farther along the trail, a few hundred feet higher than the spring, and not long before we reach the top, we make the last two significant additions to our list, two birds of our highest mountain country. One is the Carolina Junco, or southern Snowbird. Some people think that the coming of the "snowbird" means the coming of snow, but nests of your Carolina Juncos can be found in June on almost any of our mountains above 3,000 feet. The last bird is the Veery, or Wilson's Thrush, found in Rockbridge only near the tops of the very highest mountains. In Camping Ridge Gap, between Thunder Hill and Apple Orchard, is another alluring spring, more in the open than the little spring we have just left. Here under the scattered oak trees the ferns and the high grass furnish a bed to the tired hiker. Here, stretched out at his ease, he can hear in the oaks about him from a half-dozen birds at once, that most haunting and most ethereal of all our bird songs, the song of the Veery.

And now, to the point of all this--that is, in addition to the de-

light of a day in such places and with such birds--to the scientific point of all this. When we came to classify our notes for the day it became evident that Thunder Hill presents a very definite altitudinal succession of bird life. Some birds, such as the Indigo Bunting, Brown Thrasher, Ovenbird, and Towhee, are found in the valley and on the mountain top. Some birds, the Mockingbird and Cardinal, for example, are found only in the valley. The Acadian Flycatcher and Louisiana Water-thrush are found in the valley and on only the lower mountain reaches. The Hooded Warbler and the Redstart go from the valley about half-way up. The Wood Thrush and the Red-eyed Vireo go from the valley all or most of the way up. The Black-throated Green Warbler and the Scarlet Tanager begin on the lower reaches and continue most or all of the way up. Others, such as the Cairns's Warbler, Blackburnian Warbler, Mountain Vireo, and Rose-breasted Grosbeak, begin about half-way up and go then all of the way. Still others particularly the Canada Warbler, Carolina Junco and the Veery, are found only near the top. This idea of an altitudinal succession in bird life became increasingly evident as during the succeeding years I took a score or more of climbs to the tops of other high mountains, to Apple Orchard, Rocky Mountain and Mt. Pleasant in the Blue Ridge; and to House Mountain, White Rock, Dale, Ho-back, Jump, North Mountain and Elliott's Knob in the Alleghenies. Later on other and still higher mountains in Highland county, in Southwest Virginia, and in western North Carolina were explored, until I became familiar with the external facts of this altitudinal succession.

The next question is as to the Why? of this succession. Why are certain birds found only at certain elevations? The first and most obvious and in part correct answer is that as one climbs a mountain he passes through different kinds of territory--marshy stream margins, scrubby fields, open pastures, and woods of various types, conifers, hardwoods and low second growth. Obviously one does not find a Red-winged Blackbird on a dry wooded mountain shoulder; nor a Cardinal in primeval forest; nor Veeries in open pasture. One finds each bird in the habitat for which it is suited and which, therefore, it prefers. So true is this that it may be said that the number of birds which I can expect to find on any mountain trip, and the reason, for example why I expect to find fewer birds on House Mountain than on Apple Orchard, was settled a million years ago in some past geological era. But this answer from type of habitat, while obviously true, is not at all sufficient. If it were, why, to mention but a few out of a hundred possible objections, is the Yellow Warbler so common in yards and parks at the foot of the mountains and yet not found in similar spots at Camp Kewanee at 3,600 feet on Apple Orchard; or why is the Veery not found in the open type of oak woods which it loves when these woods occur down in the valley; or why is it that on Brushy Hill the two tanagers meet at a line drawn at about 1,500 feet, the Scarlet Tanager not straying far below that line and the Summer Tanager not venturing far above it, even though the type of woods which they both like are found on both sides of this invisible barrier? This habitat explanation is very important within the zones, which we shall discuss in a moment, but altogether insufficient as an explanation of the fact that there are zones. If a man familiar with the facts in the altitudinal distribution of birds were taken blindfolded to any place on any of our mountains and left there, still

blindfolded, for half an hour, he could, just by listening to the singing of the birds about him, come very close to giving you the altitude of the spot. It is further interesting to note that one can get this same succession of bird life by travelling northward as by travelling upward. Longer distances must be travelled, to be sure. In order to find the birds one would get here by climbing the 1,000 feet to Petite's Gap, one must go to northern Pennsylvania; and in order to see Juncos or to hear Veeries sing one must go into New York or New England. As one discovers how closely the north and south distribution of birds can be correlated with their up and down distribution, and as one remembers that the chief thing that changes as one travels altitudinally or latitudinally is temperature, one is forced to wonder whether temperature is not an important, possibly even the dominant factor in the distribution of birds and other animals.

Fifty years ago a scientist in government service in Washington was asking these same questions. And because his answers were so original, so comprehensive, so important, and yet at the same time so unsatisfactory in some respects a major section of this paper will be devoted to a discussion of his theories before coming back to Rockbridge County and the southern mountains. This man, Dr. Clinton Hart Merriam, was Chief of the Division of Ornithology and Mammalogy in the Department of Agriculture. Shortly afterwards, while he was still chief, this division became the Bureau of Biological Survey. In his field work in the mountains and particularly in the West he was impressed by this altitudinal stratification and determined to make a study of its nature and causes. In part his motive was practical, as it was felt that a knowledge of natural climatic areas, or zones, as they soon came to be called, would be of great assistance to farmers in planning their crops. Up to this time there had been great confusion in the minds of botanists and zoologists in regard to the biotic areas of North America. About 50 papers had been published, each one proposing its own zoogeographic scheme. Merriam, in summarizing these, was able to find at least a rough agreement on the division of North America into four biotic provinces: a Boreal province, stretching across the northern part of the continent; and three provinces reaching north to south, the Eastern, or Atlantic; the Central, from the eastern edge of the plains to the Sierra Nevada and Cascade Ranges; and a Western, or Pacific. To his mind, this classification was altogether unsatisfactory, and he set to work to study the question anew.

Merriam's work went through three phases, exploration, description, and theoretical explanation, although in a measure the three ran concurrently. The two classic papers for the study of this work are, first "Results of a Biological Survey of the San Francisco Mountain Region in Arizona" (1890), an historic paper in the annals of North American zoogeography; and, second, "Life Zones and Crop Zones of the United States" (1898). Each of these booklets had a colored map of life zones, a comparison of which is most interesting, both because of the development in the theory of life zones which is indicated and because of the curious fact that the first map, less under the influence of his idea of the transcontinental character of the zones is more acceptable than the later one of modern ecologists.

(1). EXPLORATION. In 1889 Merriam and his assistants made a thorough

biological survey of the San Francisco Mountain and nearby territory in Arizona, not far from the Grand Canyon. This mountain was chosen because of its southern position, isolation, great altitude, and proximity to an arid desert. Between the deserts of Arizona about its foot and its 12,794 foot peak covered most of the year with snow, are found all types of climate and of animal and vegetable life known from the West. Specimens were collected, with the result that some twenty new species and subspecies of mammals and many new plants and reptiles were discovered. Lists of all plants and animals found were carefully plotted according to altitude and type of locality. Seven distinct belts or zones were recognized on the mountain--an arid desert region, a pinon belt, a pine belt, a Douglas fir belt, an Engelmann's spruce belt, a narrow zone of dwarf spruce, and the bare area around the summit. The following year a much larger area of 20,000 square miles in Idaho was studied in similar fashion. In 1891 the so-called Death Valley Expedition surveyed an area of 100,000 square miles, which contained the lowest (Death Valley) and the highest (Mount Whitney) points in the United States.

(2). DESCRIPTION. As a result of these studies Merriam came to a certain conclusions about the distribution of plants and animals. (a). There are in the mountains of the West certain life zones like the zones long recognized in the eastern part of the country. Each zone is characterized by a group of plants and animals not found as a group, even though some of the individuals might occur, in any other zone. (b). These zones are of transcontinental extent. This involved a radical change in the conception of the principles involved in faunal areas. Divisions are properly made not as one goes from east to west but as one goes from south to north. This implies a basic value in the temperature factor in the origin of zones. (c). The faunas and floras of North America are properly divisible into only two primary groups, and therefore into only two primary zoogeographic regions, a northern or Boreal, and a southern or Austral. (d). The final effort in the descriptive part of his work was the more accurate charting of the various life zones. In the paper of 1898 he made his final statement as to the limits and nomenclature of these zones. He recognized two primary regions, Boreal and Austral, each divided into three life zones, with an additional Tropical Zone covering only the tip of the Florida peninsula from Lake Okeechobee south.

In the Boreal Region there are three zones--the Arctic-Alpine, the Hudsonian, and the Canadian. (a). The Arctic-Alpine Zone includes the country, both latitudinally and altitudinally, which is above the limit of tree growth. (b). The Hudsonian Zone covers the northern parts of the great transcontinental coniferous forest, from Labrador to Alaska, and small areas at the tops of the higher mountains of the West. (c). The Canadian Zone covers the southern or lower parts of the transcontinental coniferous forest, reaching as far south as northern Michigan, Vermont, New Hampshire and Maine, and along the summits of the higher Appalachians to the Great Smoky Park region. There are also extensive Canadian area on the middle stretches of the western mountains. There are only traces of this zone in Virginia. This is the most northerly of the agricultural regions, where turnips, white potatoes, and the

hardiest cereals grow. Characteristic birds of this zone are the Brown Creeper, Golden-crowned Kinglet, Winter Wren, and Red-breasted Nuthatch; and in the north the White-throated Sparrow and Myrtle Warbler. The red squirrel is one of the characteristic mammals; and in the north the porcupine and the varying hare.

The Austral or Southern Region also has three zones, and since they concern us more nearly they will be described in more detail. The nomenclature of the Austral Zones is somewhat complicated by the fact that each zone has a general name and also specific names for the eastern humid and the western arid sections of the zone. (a). The Transition Zone, known in the east as the Alleghanian, covers the greater part of Southern Michigan, Wisconsin, New York, New England, parts of Pennsylvania, the territory south along the mountains into northern Georgia, and large sections of the lower slopes of the western mountains. Practically all of the strictly mountain territory in Virginia belongs in this zone. As its name indicates, it is a transition region where boreal and austral elements overlap but where, however, the austral predominate. Into this zone the oak, hickory, chestnut, and walnut push from the south to meet the hardy maples, the beech, birch and hemlock of the north. Here the Oriole, Catbird and Wood Thrush meet the Veery, Mountain Vireo and Junco. Here the gray squirrel, the southern mole and the cottontail meet the red squirrel, the jumping mouse and the star-nosed mole. Here apples and cherries, white potatoes, barley, oats and hay crops are at their best. (b). The Upper Austral Zone is known in the West as the Upper Sonoran and in our section as the Carolinian zone. It is the zone of the middle states outside the mountains, reaching from the mouth of Chesapeake Bay to southern Connecticut, still farther north in the valleys of the Hudson and Connecticut Rivers, still farther south in the Piedmont country. Practically all of Virginia outside the mountains is in the Carolinian zone; and it includes the floor of the larger mountain valleys. This is the country of the sassafras, the tulip tree (poplar), hackberry, and, away from the mountain influence of the sweet gum. It is the country of the peach, apricot and quince, of tobacco and the sweet potato. Here the highest yielding varieties of corn and winter wheat flourish. Characteristic mammals are the opossum, gray fox, and fox squirrel; while characteristic birds are the Cardinal, Carolina Wren, Titmouse, Gnatcatcher, and Yellow-breasted Chat. (c). The last of these Austral zones is the Lower Austral, known in the west as the Lower Sonoran, but with us as the Austroriparian. It covers the greater part of the South Atlantic and Gulf States. It is further subdivided into Louisianan and Floridian sections, the latter being peculiar to Florida. In Virginia only the extreme southeastern corner of the state, around Norfolk and the Dismal Swamp, comes within this zone. Here the long-leaved pine grows in the sandhills, the live oaks fringe the lowland rivers, cypresses shade the deep swamps, and the magnolia blooms in the cabin yards. Here the singing of the Mockingbird and the fragrance of the scuppernong on the heavy night air stir nostalgic longings in the heart of the expatriate who has come back for an autumn week. On the broad plantations flourish cotton, sugar cane, rice and peanuts. The Mockingbird, the Painted Bunting, the Red-cockaded Woodpecker, the Chuck-Will's-widow, and the Prothonotary and Swainson's Warblers are characteristic birds.

(3). The last, and to his mind, most important part of Merriam's work was the THEORETICAL EXPLANATION. From the beginning he had felt that the factor of temperature was the critical one. Even in his first paper he could say that "temperature and humidity are the most important causes governing distribution, and that temperature is more important than humidity" (Merriam, 1890). His later work served only to develop that theory. Earlier workers who had tried to work out the outlines of zones by use of the temperature factor had failed because they studied the distribution of animals as if their spread had been in only one direction. The new element in Merriam's researches was the recognition of the fact that certain boreal species have been dispersed from the north southward, while austral species have been dispersed toward the north. From this he inferred that the southward and northward dispersals, and therefore the southern and northern limits of any one, are governed by two different sets of temperature factors. He selected almost a priori two sets of temperature factors, and then proceeded to check them with the known facts of distribution. They checked out so well that he did not find it necessary to make any drastic revisions in his assumptions. This in itself should have struck him as a suspicious circumstance that might well have cast doubt on his whole method. To put his line of attack in his own words, "the temperature selected as probably fixing the limit of northward distribution is the sum of the effective heat for the entire period of growth and reproduction . . . a minimum of 6° C. or 43° F. was assumed to represent the inception of the period of physiological activity in spring Beginning at 43° F., all mean daily temperatures in excess of this were added together. . . . When the sums of the positive temperatures for a large number of localities in the United States were plotted on a large scale map it was found that isotherms (lines showing an equal quantity of heat) could be drawn that corresponded almost exactly with the northern boundaries of the several zones" (Merriam, 1895). In similar fashion in fixing the southern boundaries he assumed that the mean normal temperature of the hottest six consecutive weeks of summer was the critical temperature factor. From these assumptions, checked as best he could and platted with infinite pains, Merriam propounded his two laws of Temperature Control of the Geographic Distribution of Animals and Plants: First, "The northward distribution of terrestrial animals and plants is governed by the sum of the positive temperatures for the entire season of growth and reproduction." Second, "The Southward distribution is governed by the mean temperature of a brief period during the hottest part of the year" (Merriam 1894).

For nearly fifty years these zone outlines and these temperature laws have been all but accepted as final by field naturalists. When one realizes the importance of the subjects and the magnitude of the assumptions involved, there is an amazing paucity of titles dealing directly with Merriam's work. There were good reasons, to be sure, for letting his work go unchallenged. It was a great accomplishment, and whether perfect or not a major piece of biological theorizing. It was of very practical value in field work. It had the weight of government support behind it. Then, too, testing Merriam's conclusions was made most difficult by the fact that he only gave the bare conclusions and nowhere published his computations. Although it is only within the present decade that definite attacks have been made upon his work, evidence was

accumulating from many sources, primarily from the work of ecological botanists, to indicate that a reexamination of his conclusions was past due. For the purpose of such an examination we may arrange the details of his work into three groups: first, the temperature laws; second, the transcontinental character of the zones; and, third, the significance, if any, of his zones. In arranging these groups in that seems to me the order of their vulnerability.

The weakest part of Merriam's work is probably to be found in his temperature laws. Prof. Rexford F. Daubenmire of the University of Idaho (1938) has so well summed up the defects of this part of the work that we may quote some of his criticisms. "Neither field nor laboratory tests were made to substantiate the temperature hypotheses used as bases for the explanation of distribution. Inferences drawn from the very meager studies of a few organisms were assumed to hold true for all forms of life. The same threshold value (6°C.) was used for all species of plants and animals.... Each degree of temperature is assumed to have the same significance... The few detailed studies of temperature summation which have been made in recent years indicate that this idea is of no great significance in connection with plant growth." Wendeigh (1932) has shown that most temperature data give isotherms which roughly parallel latitudinal or altitudinal lines, so that Merriam could probably have gotten his correlation with biotic zones from almost any set of temperature data he had chosen. It has become increasingly clear that these particular temperature laws have little meaning.

Aside altogether from his specific temperature laws, the emphasis placed by Merriam upon the importance of temperature in general as a factor in distribution has been sharply attacked. It seems to me clear that he gave too much place to temperature as a solely regulative factor in distribution. The ecological relationships of any biota are entirely too complex for any one factor to be determinative. As an example, on twin mountains like White Top and Mt. Rogers, only a few miles in Southwest Virginia, with almost exactly the same altitude and therefore with the same temperatures, the same birds would be expected. Yet in several trips to this region I have found only one of three characteristic Canadian Zone birds on White Top, while all three were present in abundance on Mt. Rogers. The explanation seems to be that Mt. Rogers holds its moisture, while White Top is dry. E. N. Transeau (1905) has shown that centers of distribution are correlated with variation in the precipitation / evaporation ratio. My experience in trying to delimit the Canadian Zone in the Virginia mountains would certainly bear that out. However true all this may be, I believe that, as is so often the case in criticism, the pendulum has swung too far in the other direction and that modern ecologists are disposed to minimize unduly the part played by temperature in geographical distribution. Temperature is clearly not the solely regulative factor. I still believe it to be a dominant factor.

Another feature of Merriam's work which has come in for a good deal of criticism is his insistence that these faunal zones are of transcon-

continental extent. This is undoubtedly true and easy to see as far as the boreal zones are concerned, the Arctic-Alpine, Hudsonian and in lesser measure the Canadian. Is not that because these zones follow definite types of climatic climax vegetation? In the case of the Austral zones the transect character is not so obvious. When it comes to carrying these Austral zones across the flat country of the plains and of the Mississippi Valley, we reach an unnatural situation. As Daubenwirth (1938) has pointed out, "if we compare the central grassland province of North America (as mapped by Weaver and Clements, 1929) with Merriam's map, we are immediately struck with the fact that this biotic entity is covered by Merriam into three parts, each of which is linked up by him with one or more distinctly different types of climatic climax vegetation." In short, the zone idea cannot be unduly pressed, particularly in broad, level regions, it must be supplemented by the sociological conception of plant-animal communities of modern ecology.

The last of Merriam's work to be examined is the significance of the idea of zones and the reliability of the maps made by him and his successors. None of the criticisms cited affect the practical value of the zone concept. Its correctness and its usefulness, particularly in mountain regions, is incontrovertible. Zonal maps, however, may call for considerable modification. Such maps are dependable only where they have been made on the basis of actual field work. It happens that this is the phase of faunal zone work of which I have most personal knowledge. Reliance on the temperature factor and its attendant factor of altitude alone has tempted workers to draw hypothetical maps, and thus has brought about the danger of error. As an example, a few years ago (in 1929) an expert field naturalist, who was Merriam's assistant in the first work on the San Francisco mountain, came to Virginia to make a deer survey of Bath and Highland Counties for the Virginia Commission of Game and Inland Fisheries. In his report he discussed the life zones of the two counties. He assigned about 75 per cent of the area to the Appalachian Zone, as was quite correct. But he assigned the other 25 per cent to the Canadian Zone, as altitudes would lead one to expect, while he allowed only traces of the Carolinian. As a matter of fact any one who spends much time in these two counties will discover that the 25 per cent should have been assigned to the Carolinian zone, while there is no Canadian at all in Bath and only a trace in Highland.

All of these criticisms and all of these reservations do not touch the importance and value of Merriam's work. He was a pioneer. His work, like the work of most pioneers, was faulty and premature in many respects, but it was a great, probably the greatest single contribution to zoogeography ever made in the United States. Where faulty it has stimulated other men to more thorough work. And, while his theoretical explanations have not stood the test of time, his descriptive work and his outlining of faunal zones still have significance for field workers in America.

Some further discussion of these faunal zones as they affect Virginia and the southern Appalachians may have some interest. In Virginia and in the southern Appalachians generally the floor of the lower and broader valleys lies in the Carolinian Zone, which is the middle of the three zones of the Austral Region. In these valleys the Carolinian is not

quite pure in character. Being separated from the main territory of the Carolinian by the Blue Ridge, some of the characteristic but less hardy Carolinian birds, such as the White-eyed Vireo and Blue Grosbeak are missing, as, of course, the many-border-line Carolinian birds like the Prothonotary and Yellow-throated Warblers. It may be said roughly that the Carolinian Zone covers the valley floors up to 1,500 feet, and in open places sometimes rises to 2,000 feet, while in wooded ravines it may not extend higher than 1,200 feet. The upper boundary of this zone is tremendously affected by the density of vegetation and by the degree of the compass toward which the area faces. Along zonal boundaries the presence of any species of bird is much more dependent upon exposure and plant growth and upon the amount of sunlight received than upon altitude alone. The territory along the lower reaches of the mountains is a sort of no-man's land where almost any of the birds except the most high-ranging Alleghanian species, may be met with. In fact, the boundary line of any zone in a region like the southern Appalachians is a saw-tooth line rather than a straight-edge line. This complexity seems to be due to two characteristics of our territory: on the one hand, the occurrence even high on the mountains of cleared and inhabited places where crop land, open fields and scrub attract the open-land Carolinian birds; and, on the other hand, the occurrence of deep, dark, cool ravines, bordered by conifers, reaching down from the mountains to the boundary between the Carolinian and Alleghanian Zones is sometimes not so much a line as it is a cross-word puzzle. Roughly it may be said that the valley floor and the open country in Virginia is Carolinian, while all the mountain country except a few high summits is Alleghanian. Theoretically, judging, that is, by the altitude at which this zone ends in some of the states to the north of us, the Alleghanian should not go much over 3,000 or 3,500 feet at our latitude; but actually it goes as high in the central part of the valley as Apple Orchard and Elliott's Knob, which means close to 4,500 feet.

For some years in studying the faunal zones of the Virginia mountains my preoccupation has been with the Canadian Zone. In this part this is because of all the zones which touch the South this zone is in our territory the most limited in extent. Also, it is because more misconceptions have been held about this zone in the South and more errors made in the effort to outline its boundaries than is the case with any other zone. In part, it is because the difficulties connected with studying this zone are greater. And, finally, it is because the wasteful activities of men have affected this zone more than any other. Virginia is in a particularly unfortunate position as regards a share in this interesting Canadian Zone. While there is a good deal of Canadian Zone territory on the high Allegheny plateau of West Virginia, and a fair area of it on the great peaks of the Smokies along the North Carolina-Tennessee line there is little or no territory in Virginia which can really be called pure Canadian. On White Top and Mt. Rogers, the two highest mountains of Virginia, which reach 5,519 and 5,720 feet respectively, and possibly on a few other high mountains in Southwest Virginia, we have some small areas which are practically Canadian; and on Middle Mountain in Highland County we have some territory which approaches it. That is about all we can boast.

The Canadian Zone, as seen in Virginia and in the southern Appalachians, generally, is by no means a pure type of the Canadian. It should

rather be recognized as a Southern or modified Canadian. It has often been pointed out that island spots or finger-like extensions belonging to any faunal zone are rarely typical. It has ^{not} been sufficiently well recognized that this is true of the whole southward extension of the Canadian Zone and even of the Alleghanian Zone along the mountains through Maryland, West Virginia, Virginia and the states farther south. As an indication of the modified character of the southern Canadian it may be pointed out that of the twenty-seven birds named by Dr. Frank Chapman as characteristic of the Canadian Zone there are fifteen which do not occur as far south as the West Virginia plateau.

Virginia once had considerably more Canadian Zone territory than she now has. The presence of northern conifers of the spruce-fir type seems to be a limiting factor in the presence of this zone. Since man has appropriated almost all of the original spruce areas for purposes which seem to some of us of less importance than the production of Hermit Thrushes and Winter Wrens, we now have only spots of this zone where we once had wide areas. That process of diminution is evident in the contrast between conditions on White Top as reported for us by naturalists who visited the mountain fifty years ago and the dryer, more open, and, therefore, less Canadian conditions to be found there now. On Middle Mountain the contrast is still more painfully evident between the magnificent spruce forest that stood there in 1900 and the pitiful remnants now to be seen. It may be noted that in the Southern mountains the influence of man, with his heavy foot and his sharp axe, is definitely to raise the altitude for both the Carolinian-Alleghanian and the Alleghanian-Canadian boundary lines, and thus definitely to lower the beauty content of our mountain country. As he clears the heavy forests on the mountain-sides and then burns the mountains over, he changes the character of the flora, reduces the ability of the soil to hold moisture, exposes the ground to the sun, and raises the average temperature; and all these changes together swing the pendulum from boreal toward austral conditions, and the more unfortunately not toward a natural austral condition, which has its own characteristic beauty, but toward a crude, and second-rate austral. Unhappily, man's destructive power is greater when he blunders into Canadian territory than anywhere else. Winter wren habitats, those dark, wet mossbanks and fern brakes under the spruce woods, can be destroyed in a few days. They cannot be recreated, if indeed they can be restored at all, short of generations. Happily, the United States Forest Service is doing something now to weight the balance in the other direction. Happily, too, a new attitude toward nature is beginning to develop in America. We are getting a new appreciation of our natural beauties of mountain and forest, of swamp and marsh and water, and a new sense of the value of living things, plant and animal, not only as they bestow food for our tables and clothing and shelter, not only as they furnish sport for our hunters and fishermen, but also as they provide color for those who have eyes to see, music for those who are sensitive to nature's melody, and that beauty of nature which next to faith and kindness brings peace and healing to spirits too long harassed by the tensions of civilization.

LEXINGTON, V..

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*This paper, in its original form, was prepared for the Fortnightly Club of Lexington, Virginia, which accounts for the Rockbridge County localizations. It was then printed in The Virginia Journal of Science. Permission has kindly been granted for the use of the paper in The Raven, in order that it may be available to V. S. O. members.



The Raven

BULLETIN OF THE VIRGINIA SOCIETY OF ORNITHOLOGY
PUBLISHED AT LYNCHBURG, VIRGINIA

DR. J. J. MURRAY, EDITOR
LEXINGTON, VA.

Vol. XVI

MAY*JUNE, 1945

Nos. 5 & 6

The Ruff, Philomachus pugnax, in Norfolk

On 10 September, 1944, I was observing the sandpipers on the mud flats along the banks of Little Creek where it flows into the Azalea Gardens. The flats were literally covered with shore birds, the Western Sandpiper being the most numerous. There were also Semi-palmated Sandpipers, Stilt Sandpipers, while the little Least was there in numbers. Semipalmated Plover, Pectoral Sandpipers, Turnstones, and a few Spotted Sandpipers and Sanderlings were present. In one area a fallen tree spanned the water between two mud banks, and here I saw a shorebird I had never seen before. I studied the bird at close range from both sides of the marsh for about a half hour, then flushed it. During this time I made careful notes and sketches, and since then I have examined a number of specimens, and have come to the conclusion quite definitely that it was a male Ruff in winter plumage.

Quoting, in part, from notes made while observing the bird:- "General color; deep, golden brown, flecked with golden and whitish spots and markings. Size: larger than either the Stilt or Pectoral Sandpipers, which were nearby - about the size of the Greater Yellow-legs. Very long legs, greenish yellow in color, with a definite pinkish tinge to the feet. Bill; long, straight, and very slender, almost reminding one of the bill of a Godwit, but not as massive, and not upturned. The belly was dark, brownish buff, with an indistinct darker, crescentic marking across it. The neck was very long, and the head small, reminding one of the Upland Plover. An indistinct dark stripe ran through the eye. Finally I flushed the bird to see its flight pattern. The wing beats were slow and definite. It uttered two low, whistling calls as if took off. Very noticeable were the bright white outer tail feathers. This white gradually merged into the darker center feathers which were marked with various bars. No other shorebird has such tail markings. The legs were carried far out behind the body."

The bird, while I watched it, was very solitary, not mingling with other sandpipers. It spent most of its time preening its feathers. It was, however, startlingly conspicuous, due both to its size, and to its dark coloration.

The date on which the bird was seen was four days before the severe tropical hurricane which struck our coast, but this hurricane had been blowing for some days at sea, and may possibly explain the presence of this European species in Virginia.

Locke L. Mackenzie, U.S.A.F.
A.T.C, N.O.B., Norfolk, 11, Va.

Some Notes on the Purple Martin

By Milam B. Cater

Most of us may attribute the beginning of our interest in birds to one or two species, such as the wrens, or the bluebirds, and the joy we experienced in providing nesting house and having them accept it. Also there may be those who remember the first Purple Martins that accepted a house provided for them. This, we considered an event worthy of notice. Today, such an event would be outstanding, as the martins have disappeared from many sections where once they were common.

Since June, 1944, or for over a year, the writer has conducted a search for active or abandoned martin colonies, in Rockbridge, Alleghany, Bath, Highland, and Augusta counties, and only two colonies were located. Information at hand indicates there were formerly colonies at Buena Vista, Lexington, and Goshen in Rockbridge, and at McDowell in Highland. None were located in Bath County. A small colony was located at Clifton Forge in Alleghany County, and a large one at Staunton in Augusta County. At Clifton Forge, in 1944, 10 pairs nested in a martin house across the alley east of the Court House. Mr. Pat Huff who has maintained a colony at this location for over 30 years, states that up to 25 years ago there were several colonies in that vicinity, totaling approximately 75 pairs. He considers the decline in numbers due to the fact that old Martin houses have fallen down and have not been replaced. At Staunton, in 1944, approximately 60 pairs nested in three martin houses. The largest, a 34 room house, located at 618 West Frederick, contained 32 pairs: a small one at 202 Thompson Street, contained 12 pairs; the third at 733 Selma Boulevard contained 16 pairs. However, this year the colony at Clifton Forge has only 9 pairs; and at Staunton approximately 50 pairs are nesting. The cold and erratic spring of 1945 may have reduced the number, as purple martins, like others of the swallow family, are susceptible to protracted cold periods, when winged insects are not available for food.

The Spring arrival of the martins, west of the Blue Ridge Mountains, is on the average, April 1st to 10th. A few males, or scouts, appear first; then one or two weeks later, the remainder of the colony arrives. East of the Blue Ridge mountains, their arrival may be as much as two weeks earlier.

It is true the English Sparrows and the Starlings cause considerable interference to nesting martins, and may be one of the causes of their decline, but from observations, this is not a serious problem if certain precautions are taken. The martin house should be closed up, or taken down each fall, cleaned, repaired, and not opened, or put up again until just prior to, or on the date the martins return in the spring. Wherever there is an active colony, martin houses with 16 or more compartments, or more than one house should be provided. This will provide room for all and insure that other species that persist in nesting will not greatly interfere with the martins. Also the larger the martin colony the less likelihood of its being abandoned, their security being enhanced by numbers.

The type of martin house is not critical. They will accept any design providing it is weather proof and the compartments are not too small. The National Audubon Society leaflet No. 13, PURPLE MARTINS, or the Fish and Wildlife Service Conservation Bulletin No. 14, HOMES FOR BIRDS, show plans and dimensions for a very good martin house. The rooms should be tight and not less than 6 x 6 x 6 inches, preferably 7 x 7 x 6 inches. The house shown in the above publications is constructed in sections or floors, and these are fastened together with hooks, which renders it easily accessible for cleaning, etc. There are several companies that manufacture martin houses, furnished complete with pole if desired. It is necessary that the martin house be placed well out in the open away from trees, and other obstructions, and never less than 15 feet above the base, 20 to 25 feet being the best height.

The house should be placed on a pole that can be easily raised or lowered. One method is to sink two posts in the ground with room between them for the main pole, using two long belts through both posts and the pole, the belts spaced from two to three feet apart. Thus by removing the lower bolt the upper one acts as a pivot in raising or lowering the pole. White with green trim is the common color used in painting the martin house, other colors such as green, gray, or brown are also acceptable. Martins will not nest if the inside of the compartments are painted.

In attempting to start a new colony it is suggested that a well weathered martin house be used. It should be clean and leak proof. In areas where the martins no longer are found they are more likely to be attracted near a river, large creek, or lake, as they seem to follow the streams when scouting for nesting sites. As with others of the swallow family martins frequent areas near open water as they drink and bath while in flight.

Much patience is required in attempting to start a new colony, for though martins may appear year after year there is always the possibility they will eventually discover a house provided for them. Just to have these fine birds about, is sufficient reward for all efforts that have been expended in their behalf.

Information is needed relative to the location of active martin colonies in Virginia, or other areas, therefore any report that may be submitted on this species will be much appreciated. The writer would be pleased to correspond with any member or friend interested in the Purple Martins.

Millboro, Virginia.

The Dovekie, Alle alle, at Back Bay.

The house should be placed on a pole that can be easily raised or lowered. One method is to sink two posts in the ground with room between them for the main pole, using two long belts through both posts and the pole, the belts spaced from two to three feet apart. Thus by removing the lower bolt the upper one acts as a pivot in raising or lowering the pole. White with green trim is the common color used in painting the martin house, other colors such as green, gray, or brown are also acceptable. Martins will not nest if the inside of the compartments are painted.

On 31st December, 1944, during the regular Audubon Christmas census, we found a freshly dead Dovekie in winter plumage, on the wash flats. The day before this, Mr. Jack Perkins, the Superintendent of the Refuge at Back Bay, had found another. The bird we found was decapitated, but we found the head nearby. It may have sustained this injury by flying into one of the telephone wires. Both birds were moderately oiled.

In attempting to start a new colony it is suggested that a well weathered martin house be used. It should be clean and leak proof. In areas where the martins no longer are found they are more likely to be attracted near a river, large creek, or lake, as they seem to follow the streams when scouting for nesting sites. As with others of the swallow family martins frequent areas near open water as they drink and bath while in flight.

Approximately a week later, two live dovekies were found by Mr. Perkins and his assistant on the beach between the Refuge and the Little Island Coast Guard Station. Both birds (seen at widely different localities, but on different days) were on the beach, very near the water. Upon approaching them, both reached the water and flew out to sea a few yards. They did not fly well, and it is thought that they were also oiled to a greater or lesser extent.

In attempting to start a new colony it is suggested that a well weathered martin house be used. It should be clean and leak proof. In areas where the martins no longer are found they are more likely to be attracted near a river, large creek, or lake, as they seem to follow the streams when scouting for nesting sites. As with others of the swallow family martins frequent areas near open water as they drink and bath while in flight.

Much patience is required in attempting to start a new colony, for though martins may appear year after year there is always the possibility they will eventually discover a house provided for them. Just to have these fine birds about, is sufficient reward for all efforts that have been expended in their behalf.

These little guks are very infrequent visitors to Virginia. In a paper published in the Auk, Vol. 55, January, 1938, Alexander Sprunt, Jr., discusses the flight of Dovekies along the southeast coast during the early winter of 1936-37, but these birds seem to have struck in at about Cape Hatteras, as Sprunt does not record any of them from Virginia. The previous southern flight was the "great invasion" of 1911-12. Information is needed relative to the location of active martin colonies in Virginia, or other areas, therefore any report that may be submitted on this species will be much appreciated. The writer would be pleased to correspond with any member or friend interested in the Purple Martins.

Millboro, Virginia.

1932. It will be of definite interest to find out if this winter past also proved to be another during which the Dowekie strayed south once again.

U.S.A.F., A.T.C., N.O.B., Norfolk, 11, Va.

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Spring Census at Blacksburg

Blacksburg (Montgomery Co.), Va. (V. P. I. Campus and Farm and base of Brush Mt., with area 5 mi. in diameter).-- May 7, 1945; 7:00 a.m. to 8 P.m. clear; temperature. 35° start, 68° finish; calm a. m. p. brish S. wind by mid p. m. Observers working together except from 7:00 a. m. to 8 a.m. when only Dr. Murray was afield. Total miles, 5 on foot, 28 by car. American bittern, 1; mallard, 33; black duck, 1; baldpate, 4; blue-winged teal, 9; wood duck 13 (female with 12 young); ring-necked duck, 1; turkey vulture, 14; black vulture, 1; Cooper's Hawk, 1; broad-winged hawk, 2; osprey, 2; sparrow hawk, 6; bobwhite, 10; Florida gallinule, 1; coot, 2; killdeer, 6(1 on nest & 4 eggs); Wilson's snipe, 3; upland plover, 2; spotted sandpiper, 10; solitary sandpiper, 25; lesser yellow legs, 20; western sandpiper, 2; domestic pigeon, 3; mourning dove, 17; yellow-billed cuckoo, 1; black-billed cuckoo, 1; chimney swift, 3000 (est.); ruby-throated hummingbird, 1; flicker, 16; pileated woodpecker, 1; red-bellied woodpecker, 2; red-headed woodpecker, 7; downy woodpecker, 3; eastern kingbird, 6; crested flycatcher, 11; phoebe, 1; wood pewee, 1; rough-winged swallow, 4; barn swallow, 7; blue jay, 2; eastern crow, 41; Carolina chickadee, 6 (2 carrying food to nest); tufted titmouse, 3; white-breasted nuthatch, 4; house wren, 6; mockingbird, 1; catbird, 14; brown thrasher, 31 (2 carrying food); robin, 103 (small young out of nests, others apparently still migrating); wood thrush, 3; hermit thrush, 2; bluebird, 11; blue-gray gnatcatcher, 7; rubycrowned kinglet, 2; starling, 166 (part est.) (many carrying food to young); white-eyed vireo 1; Yellow-throated vireo, 3; mountain vireo, 1; red-eyed vireo, 9; black and white warbler, 5; worm-eating warbler, 2; Nashville warbler, 1; parula warbler, 1; yellow warbler, 2; magnolia warbler, 1; black-throated blue warbler, 1; myrtle warbler, 50; black-throated green warbler, 8; chestnut-sided warbler, 3; black-poll warbler, 1; pine warbler, 7; prairie warbler, 1; palm warbler, 6; ovenbird, 7; Louisiana water-thrush, 2; Maryland yellow-throat, 2; yellow-breasted chat, 11; hooded warbler, 3; American redstart, 2; English sparrow, 16; bobolink, 33 (31 males, 2 females); meadowlark, 48; red-winged blackbird, 54 (partially completed nest; 11 feeding in tops of white oaks); Baltimore oriole, 3; rusty blackbird, 14; purple grackle, 49 (1 carrying food); cowbird, 1; scarlet tanager, 4; cardinal, 12; indigo bunting, 4; goldfinch, 46; red-eyed towhee, 16; Savannah sparrow, 28; grasshopper sparrow, 2; chipping sparrow, 11 (some apparently migrants); field sparrow, 23; white-crowned sparrow, 16 (all in adult plumage); white-throated sparrow, 14; swamp sparrow, 7; song sparrow, 30. Total 102 species; 4,214 individuals.-- G. O. Handley, John McN. Handley, J. W. Murray.

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Annual Spring Census in the Norfolk Area.

On Saturday, 5 May, 1945, a spring census of the birds of the Norfolk Area was held under the auspices of the Virginia Society of Ornithology. The trip was arranged by Mrs. A. C. Reed, for many years the leader of ornithological activities in this locality.

Meeting at seven in the morning at the Azalea Gardens, the group visited the Wildflower Sanctuary, and then went on to the coastal marshes near Camp Bradford. From here, we proceeded to Seashore State Park, where an ample and delightful luncheon was provided by Mr. & Mrs. St. Julien R. Marshall in the Administration Building, of the Park. Following lunch, a trip was made through the countryside to Sand Bridge, and thence to the Coast Guard Station at Little Island. From here we walked south on the beach toward the Back Bay Refuge Headquarters, and, it being now near sundown, returned, calling it a very good day indeed. The score for the day was one hundred and fifteen species, among them several quite unusual for this locality and time of year. The weather was delightful, and the large number of birds seen amply repaid us for the day we took from our various wartime ^{and busy} activities.

The group consisted of the following:- Miss Mary L. Leigh; Lt. Comdr. L. L. Mackenzie; Mrs. St. Julien R. Marshall; Maurice Moore; Mrs. A. C. Reed; Frederic R. Scott; Lt. William J. Sullivan; Mrs. Herbert D. Thompson; Mrs. Thomas P. Thompson; Mrs. D. M. Thornton; Surg. Earl L. White, USPHS.

A list of the birds seen follows:- (Figures in parentheses following each bird indicate number seen); Common loon (1 in summer plumage); double-crested cormorant (31); great blue heron (4); American egret (2); snowy egret (1); little blue heron (5); Eastern green heron (6); yellow-crowned night heron (2); American bittern (1); black duck (10); red-breasted merganser (2); turkey vulture (2); black vulture (9); sharp-shinned hawk (1); Cooper's hawk (1); red-shouldered hawk (1); Broad-winged hawk (1); Southern bald eagle (7); Marsh hawk (2); Osprey (18); duck hawk (1); Eastern pigeon hawk (1); Eastern sparrow hawk (1); bobwhite (2); Northern clapper rail (1); American coot (3); killdeer (1); Wilson's snipe (3) spotted sandpiper (9); Eastern solitary sandpiper (2); greater yellow-legs (8); Lesser yellow-legs (3); least sandpiper (22); semipalmated sandpiper (1); Herring gull (50); ring-billed gull (8); laughing gull (350 est.); Forster's tern (3); common tern (1); royal tern (4); Caspian tern (2); Eastern mourning dove (3); great horned owl (2, adult and young near nest); chuck-will's widow (2); chimney swift (15); ruby-throated hummingbird (2); eastern belted kingfisher (2); flicker (3); southern pileated woodpecker (1); southern downy woodpecker (1); eastern kingbird (6); northern crested flycatcher (9); Acadian flycatcher (1); eastern wood peewee (2); tree swallow (4); bank swallow (2); rough-winged swallow (4); barn swallow (15); purple martin (18); eastern crow (60 est.); fish crow (15); Northern Carolina chickadee (8); tufted titmouse (6); house wren (2); Carolina wren (14); long-billed marsh wren (4); short-billed marsh wren (2); eastern mockingbird (25); catbird (9); eastern brown thrasher (7); robin (8); wood thrush (3); eastern bluebird (6); blue-gray gnatcatcher (11); Cedar waxwing (1); sterling (20); white-eyed vireo (6); yellow-throated vireo (3); red-eyed vireo (5); Philadelphia vireo (1); Black and white warbler (1); prothonotary warbler (1); southern parula warbler (3); Yellow warbler (3); myrtle warbler (9); black-poll warbler (1); northern pine warbler (6); northern prairie warbler (9); ovenbird (2); Kentucky warbler (1); Athens yellow-throat (7); yellow-breasted chat (5); hooded warbler (14); American redstart (1); English sparrow (25 est.); meadow-lark (1); eastern red-wing (50 est.); orchard oriole (3); boat-tailed grackle (7); purple grackle (25); eastern cowbird (2); summer tanager (4); eastern cardinal (5); indigo bunting (2); eastern goldfinch (1); red-eyed towhee (8); eastern Savannah sparrow (5); eastern Henslow's sparrow (4); sharp-tailed sparrow (1); eastern chipping sparrow (8); eastern field sparrow (6); white-throated sparrow (3); swamp sparrow (2); eastern song sparrow (6); Atlantic song sparrow (9).

Locke L. Mackenzie.

Hooded Mergansers at Seward Forest

In the afternoon of March 24, 1945, a pair of Hooded Mergansers, Lophodytes cucullatus (Linnaeus), were seen on a small pond near the Seward Forest headquarters. They gave me plenty of time to examine them at about 50 yards with 6 X glasses before they took to the air with much splashing of their feet in the water. This is my first record for Brunswick County.

John B. Lewis.

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Virginia Society of Ornithology
Salem, Virginia

June 15, 1944
England

Gentlemen:

This is to inform you that the excellent April-May issue of The Raven reached me today. It certainly is good to receive some reading material as 'The Raven' -- news and notes on the birds back home. Certainly wish I were back in Doatham Park where I spent several weeks last summer with this organization.

I look forward to each issue of the Society's publication, and have received every issue since I subscribed.

Very sincerely
Cpl. Elbert B. Nixdorf
ASN-33507102
33rd Spec. Serv. Co. APO, 579, N.Y.

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1945 Bird Program

(According to a letter sent out to member clubs by Mrs. C. H. Willis of Roanoke, Chairman of the Committee on Birds, the following is the 1945 Bird Conservation Program of the Virginia Federation of Garden Clubs. Let the good work go on!)

SLOGAN: Every Garden a Bird Sanctuary

OBJECTIVES FOR 1945

1. Bird sanctuaries in parks, hospital areas and cemeteries.
2. The observance of a yearly Bird Day, when the program is given over to birds. Preferably in May, birth month of Audubon.
3. The sponsoring of a Junior Audubon Club in every town, by Garden Club members.

4. Remember the birds when setting shrubs and planning the foundation planting. Choose varieties that furnish food and shelter for birds.
5. Learn more about the history and habits of the robin.
6. The establishment and maintenance of feeding stations for birds near military camps.

Keep a local bird census, with migration dates.

Call on the Chairman for bird reference literature, list of desirable shrubs and trees.

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THE VIRGINIA SOCIETY OF ORNITHOLOGY

Statement of Treasurer, covering receipts and disbursements from
January 1, 1944 to December 31, 1944

December 31, 1943 - Balance on hand as per last report\$ 220.24

RECEIPTS - 1944

Membership Dues.....	\$ 133.50
Contribution - H. H. Bailey.....	10.00
	<u>\$ 143.50</u>
TOTAL.....	\$ 363.74

DISBURSEMENTS:

Voucher No. 49 - January	8, 1944	Mrs. Elsie W. Garst Supplies for Raven.....	\$ 26.80
" " 50 - February	5, 1944	National Audubon Society To October 1944	10.00
" " 51 - February	23, 1944	Mrs. Elsie W. Garst ... Postage and supplies.....	12.00
" " 52 - February	24, 1944	Mrs. Elsie W. Garst Jan. & Feb. Raven.....	10.00
" " 53 - April	6, 1944	Cash 100 stamped envelopes.....	3.23
" " 54 - April	26, 1944	Mrs. Elsie Garst March Raven.....	5.00
" " 55 - June	5, 1944	Mrs. Elsie W. Garst April and May Raven.....	5.00
" " 56 - June	5, 1944	Mrs. Elsie Garst Postage.....	12.00
" " 57 - July	21, 1944	Mrs. Elsie W. Garst Raven Supplies.....	33.23

Voucher No. 58 - July	27, 1944	Mrs. Elsie W. Garst Raven.....	\$ 5.00
" " 59 - July	31, 1944	Mrs. Elsie W. Garst July Raven.....	5.00
" " 60 - September	19, 1944	Mrs. Elsie Garst.. Postage.....	12.00
" " 61 - September	25, 1944	Mrs. Elsie Garst August Raven.....	5.00
" " 62 - November	21, 1944	Mrs. Elsie W. Garst Sept. Oct. Raven.....	5.00
TOTAL.....			\$149.20
Balance on hand December 31, 1944, as per bank statement.....			214.46
TOTAL.....			<u>\$363.74</u>

Respectfully submitted,

T. L. Engleby, Treasurer.

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The Birds of Georgia, a Preliminary Check-List and Bibliography of Georgia Ornithology. A notice has been received of the publication of this volume of 111 pages, sponsored by the Georgia Ornithological Society and printed at the University of Georgia Press, Athens, Georgia, at the price of \$2.00. It has been compiled by Earle R. Greene, William Griffin, Eugene P. Odum, Herbert Stoddard, and Ivan Tomkins, with a historical narrative by Eugene E. Murphy. The major part of the book is an annotated check-list of the birds known to have occurred in Georgia. This latest state check-list has been very favorably commented on, and should be of considerable interest to bird students in Virginia.

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REGIONAL MEETING AT RICHMOND

On April 20, and 21st, 1945, bird lovers in the vicinity of Richmond, Virginia, gathered for a regional meeting under the auspices of the Virginia Society of Ornithology.

On Friday evening, the 20th, approximately a hundred people gathered for a public meeting in the auditorium of the Presbyterian Assembly's Training School. The main portion was devoted to the showing of four motion picture films. Three of these were made under the auspices of the National Audubon Society. Their titles were "Tree-top Concert Singers", "Campaigning for Cranes and Caracaras", and "Rainey Wildlife Sanctuary". The fourth film was a color reel of Hawk Mountain Sanctuary.

The next morning at seven o'clock seven members met on the campus of the University of Richmond. We spent most of the morning covering that area., and later in the early afternoon, proceeded to Curles Neck Farm, about fifteen miles southeast of Richmond on the James River. We were joined at Curles Neck by six other members and friends. Our record of the trip follows:

Second-growth mixed woodlands, 44%; suburban residential areas, 15%; open farmland, 41%; weather, warm and clear; total hours, 8½. Great blue heron, 4; pin-tail, 1; greater scaup, 1; turkey vulture, 22; black vulture, 4; sharp-shinned hawk, 2; broad-winged hawk, 3; bob-white, 9; coot, 9; killdeer, 2; greater yellow-legs, 6; mourning dove, 14; chimney swift, 28; flicker, 8; red-bellied woodpecker, 5; red-headed woodpecker, 2; downy woodpecker, 2; crested flycatcher, 3; phoebe, 3; rough-winged swallow, 9; purple martin, 4; blue jay, 45; crow, 45; fish crow, 1; Carolina chickadee, 4; tufted titmouse, 10; white-breasted nuthatch, 4; house wren, 12; Carolina wren, 5; mockingbird, 19; brown thrasher, 3; robin, 36; wood thrush, 9; bluebird, 12; blue-gray gnatcatcher, 1; ruby-crowned kinglet, 1; cedar waxwing, 21; starling, 40; white-eyed vireo, 5; yellow-throated vireo, 1; red-eyed vireo, 8; black and white warbler, 3; parula warbler, 6; myrtle warbler, 28; yellow-throated warbler, 8; pine warbler, 4; prairie warbler, 3; oven-bird, 6; yellow-throat, 1; hooded warbler, 12; redstart, 14; house sparrow, 350 (est.); meadowlark, 14; red-wing, 80; rusty blackbird, 250 (est.); grackle, 6; cowbird, 60 (est.); cardinal, 17; goldfinch, 7; red-eyed towhee, 26; slate-colored junco, 8; chipping sparrow, 16; field sparrow, 11; white-throated sparrow, 18; song sparrow, 34. Total - 65 species, 1405 individuals. Observers: Mrs. C. W. Darden, A. U. English, W. E. Miller, J. R. Sydnor, Mr. and Mrs. A. C. Reed, F. R. Scott, - Afternoon only: Miss A. Ball, Miss E. D. Hill, Mrs. J. R. Sydnor, C. E. Smith, Miss E. H. Ryland, Mrs. F. W. Shaw.

James R. Sydnor
Frederic R. Scott.

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SPRING FIELD TRIP

ROANOKE CHAPTER * V. S. O.

In spite of a cold rain, with a determination born of enthusiasm, fourteen members of the Roanoke Chapter, of the V. S. O. met at the Y. W. C. A. at 7 A. M. April 29, 1945, and proceeded on their scheduled field trip.

The first stop was at "Lake Back-O-Beyon", the beautiful estate of Charles H. Carson, located about four miles east of Roanoke on the Lynchburg highway. Mr. Carson was on hand to give us a cordial welcome and to extend to us the freedom of his forty acres of woods and lake. We had hardly alighted from the cars before entries in notebooks were being made of the Baltimore Oriole, the Green Heron, Redwings, and Swallows. In the misty rain, the lake, surrounded by wooded hills, seemed alive with darting, singing birds. An old dead tree out in the water made a fine perch for numerous Swallows, and afforded the party an excellent opportunity to observe the Tree, Bank and Rough-winged species at close range.

The next stop was at Murray's Pond, a few miles away, where additional records were made of water and marsh birds. Here, for the first time for many of the party, were seen the Blue-winged Teal, Beldpate, Black Duck, Coot and Osprey. A Bluebird carrying food led to the discovery of its nest with young, located in a fence post where it could be observed and enjoyed by all.

Bennett's Springs, higher in the mountains, was the next stop. Here Mr. T. L. Engleby has a summer home, and it was to his cabin the party went to enjoy a picnic lunch before a roaring fire. Miss Helen Engleby provided the group with steaming coffee, which added greatly to the occasion.

Having warmed up and dried out, the party resumed its quest, and was almost immediately treated to the full song of the Ruby-crowned Kinglet, repeated several times.

From Bennett's Springs most of the party turned homeward in the late afternoon. However, one group decided to go on up into Mason's Cove to "Fernwood", the summer home of Mr. and Mrs. J. D. Turner, to hear the drumming of the Grouse, and the loud, ringing call of the pileated woodpecker.

The list of 79 species for the day follows: Green Heron; Black Duck; Baldpate; Blue-winged Teal, Turkey Vulture; Black Vulture, Sharp-shinned Hawk; Osprey; Sparrow Hawk; Ruffed Grouse; Bob-white; Coot; Killdeer; Spotted Sandpiper; Mourning Dove; Yellow-billed Cuckoo; Chimney Swift; Belted Kingfisher; Flicker; Pileated Woodpecker; Red-bellied Woodpecker; Downy Woodpecker; Kingbird; Crested Flycatcher; Phoebe; Tree Swallow; Bank Swallow; Rough-winged Swallow; Barn Swallow; Blue Jay; Crow; Chickadee; Tufted Titmouse; white-breasted Nuthatch; House Wren; Bewick's Wren; Carolina Wren; Mocking Bird; Catbird; Brown Thrasher; Robin; Wood Thrush; Bluebird; Blue-gray Gnatcatcher; Ruby-crowned Kinglet; Cedar Waxwing; Starling; Mountain Vireo; Red-eyed Vireo; Warbling Vireo; Black and White Warbler; Prairie Warbler; Ovenbird; Louisiana Water Thrush; Yellow-throat; Yellow-breasted Chat; Hooded Warbler; Redstart; English Sparrow; Meadow Lark; Red-winged Blackbird; Baltimore Oriole; Rusty Blackbird; Purple Grackle; Cardinal; Goldfinch; Towhee; Grasshopper Sparrow; Vesper Sparrow; Tree Sparrow; Chipping Sparrow; Field Sparrow; White-throated Sparrow; Song Sparrow.

Those making the trip included Mr. and Mrs. J. E. Comer, Mr. and Mrs. Lloyd H. Allen, Mrs. J. Gordon Jennings, Mrs. Gordon Kelley, Mr. J. D. Turner, Mr. T. L. Engleby, Miss Helen Engleby, Mr. L. E. Hawkins, Mr. Frank Robertson, Mr. Willie Robertson, and Mr. and Mrs. A. O. English.

A. O. English, Roanoke, Va.

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The Raven

BULLETIN OF THE VIRGINIA SOCIETY OF ORNITHOLOGY
PUBLISHED AT LYNCHBURG, VIRGINIA

DR. J. J. MURRAY, EDITOR
LEXINGTON, VA.

Vol. XVI

JULY-AUGUST, 1945

Nos. 7 & 8

WITH A MEMBER OF THE V.S.O. IN THE EUROPEAN THEATER OF WAR 1/

By Charles O. Handley, Jr.

January 24, 1945 (Port of Embarkation - New York).- Dear Folks, I've seen one new bird for my life list since I left home - Great Black-backed Gull. Also, lots of Herring and Ring-billed Gulls. As I go farther from home I'll probably have to have you help me identify birds unless I have a chance to get a bird book somewhere.....

Letter One.- Dear Folks, I have taken my last look at America for some time. I stood nearly three hours on the cold deck to get my last glimpse. "America the Beautiful" - that phrase has a real meaning when you are sailing away from it. Also, I can tell you now that the phrase "cold gray Atlantic" is no idle prattle either. Tonight the ocean is pretty darn rough but as yet I haven't been bothered with seasickness but time will tell though.....

Dear John, You'll have to take an ocean voyage sometime - it's fun. I have been spending most of my time out on the open deck watching the waves and the wake that the ship makes. I believe the warm sunshine and ocean air is curing the bad cold I had, too. Since we lost sight of land I have seen but two birds - some sort of a sparrow (not an English or House Sparrow) and a small

1/ This paper, consisting of excerpts from letters to his family and Prof. A. B. Massey from a soldier overseas, is of so much general interest that we are glad to devote to it a whole issue of THE RAVEN. It is the first contribution for some time from one of the most active and younger members of the V.S.O., who has had to lay aside his work in ornithology for a time in order to serve his country. The combination of war news and natural history, the comments on conservation in Europe, and the fascinating narrative of observation of birds under difficulties in many countries will make these letters appeal to all of our readers. Editor.

bird about the size of a common tern, which I took to be a petrel of some kind. (Determined later to be a Shearwater.) It was white below and light bluish or gray above; I don't believe it is a North American bird. Other than these two, which I saw only momentarily, I have seen neither bird nor mammal, though I have continually scanned the waves hoping to see a whale or a porpoise. Did you ever climb down stairs? That's about what you have to do when the ship tilts forty-five degrees, and it often does, too. Eating is somewhat of a problem when the ship is rocking that way, too. You have to hang on to all your plates for dear life.

Section Three of Letter Three.- I haven't seen any more birds, or anything for that matter, but it has occurred to me that the bird I thought might have been a petrel, might and probably was a shearwater, and probably native of North America.

February 1, 1945 Somewhere in England Letter Five.- I've seen three countries already: Northern Ireland, Scotland, and England. They are all very pretty and show no outward evidence of war. Just passing through you might think you were in the U. S. except for two things: There are no frame buildings; all are brick, stone, or concrete; and there is no smoke from the chimneys. In Scotland the smokeless chimneys in a snowy landscape made the cities seem very bleak and cold, but they were still pretty. Along the Scotch coast there are no trees and the mountains come right down to the water's edge, often dropping off in sharp cliffs. The gentler slopes were covered with some green vegetation - heather or grass. Further inland were a lot of deciduous trees along the valleys but all the mountain tops were bare. With their deep blanket of snow they were surely pretty; and skiing and sliding would have been good. Before we debarked I had an excellent opportunity to study gulls and I made sketches of six or seven different kinds which I shall be able to identify if I ever get a chance to see a bird book. If I don't, I can send the sketches home. As we lay in the harbor there were over two thousand gulls in the immediate vicinity of the ship, all close enough to be identified. One time I counted four hundred and twenty-nine on the water and there were at least that many more flying around; then I went over on the other side of the ship and there were as many again there. Another time I counted just over a thousand in a space about as large as our larger pond at home. Most common were the ring-billed gulls and something that looked somewhat like our Bonaparte's Gull. There were a few black-backed gulls, too. These black-backs are real pirates - they are larger than the other gulls and if the others find a choice morsel of food they dive into the fray and come out with the food; also they pursue the other gulls and make them drop whatever they are carrying and catch it in mid-air; they are the prettiest of all, though. I also saw a shearwater and a bunch of scoters, solid black with no obvious markings. In England I have seen English Sparrows, starlings, crows (or blackbirds of three sizes - one the size of our crow and the others smaller and larger), and a quail (running across a bare field). Another thing different about this part of England at least is that there are no weedy fields, as we know them, and they are all either closely mowed or closely grazed. Everybody seems to raise cabbage here, and I've seen many large fields of it. I guess it must be one of the main items of food.

February 2, 1945 Somewhere in England Letter Six.- I have at last reached the end of the first lap of my journey and am at an army camp somewhere in England, safe and sound. So far, the trip has been nothing but a joy ride and has been punctuated by only minor inconveniences. The scenery in England,

Scotland and Wales is extremely beautiful and interesting and well worth seeing. I guess I'll have to do all my sight seeing now, for I couldn't afford a similar trip on my own funds. An Englishman I talked to said that the boat ride alone, in peace time, would cost over eighty pounds. I have gotten fleeting glimpses of many historic buildings and towns, some of which I had read about in Chaucer's and Shakespeare's tales.

February 2, 1945 Somewhere in England Letter Seven.- Dear John, I wish that it were peacetime and you were here with me to see all the interesting birds and aeroplanes and other sights that there are to see, but since you aren't I'll try to tell you as much as I am allowed, though at times that won't be very much. I've seen lots of new and peculiar looking birds, some very familiar old friends, and some that look familiar but which are actually different from their North American counterparts that you and I know. I saw eleven kinds of birds in Scotland and I have seen twenty-two kinds in England and Wales. Starlings and English Sparrows have been common everywhere. I've seen finches, goldfinches, crows, magpies, herons, doves, moor hens, chickadees, coots, quail, pheasants, gulls, hawks, and grackles. As soon as I leave England I'll send you the list and notes so you can look them up and identify them in Daddie's book of British birds. I don't expect I'll have a chance to get a book and identify them myself.

February 2, 1945 Somewhere in England Letter Eight.- This is a very interesting country, and I wish that I could stay here long enough to become better acquainted with it. When I finally quit traveling and had an opportunity to observe small land birds, the result was such as I had never experienced before. I went outside the barracks in the early morning and was greeted by a loud chorus of calls and songs all of which were absolutely foreign and intriguing.- all except one - there were plenty of English Sparrows around. They apparently don't have wood fields in England, so I don't see where Quail and Pheasants find cover. As we traveled along I saw one Quail running across an open field, and later, at dusk, I saw a beautiful cock English Pheasant feeding in an open field. I haven't seen any of those little game sanctuaries which are supposed to dot the English countryside. If the Moor Hen is a gamebird, it certainly is an abundant one. (It is not a gamebird. Ed.) All the fields were dotted with pools of water due to a recent thaw, and I saw dozens of those Gallinule-like birds right out in the open, in groups of one or two or half a dozen.

February 4, 1945 Letter Eleven.- Dear Folks, I sure do like it here and wish this were as far as we were going, despite mud and C rations. I've had a wonderful time walking around through this peaceful and beautiful countryside and identifying (or rather, seeing) scads of new and peculiar looking birds. Yesterday I saw nine new kinds and today five more, to make a total of thirty-five for this country. I've seen four kinds of titmice, a wagtail, nuthatch, yellow-hammer (green woodpecker - the yellow-hammer in England is a small finch. Ed.), four kinds of finches or linnets, English Robins. Today I flushed a covey of nine quail and a single cock pheasant. I heard a paratrooper saying that yesterday he saw about fifty pheasants while he was hunting them with a carbine. He only got one though. I heard quite a few others talking about hunting with various weapons ranging from machine guns to pistols, but no one seemed to be very successful. They would be quite a menace to wildlife if they were. I'll bet the English don't appreciate such goings on. It's too bad. I'm enclosing a couple of fronds of the Harts tongue fern which I collected in England,

February 4, 1945. Please save them for me. They were growing profusely on rocks which walled in a small spring in a pretty little glade shaded by fir trees on a country estate. This same kind of fern has escaped from cultivation and become naturalized at several widely scattered points in the eastern United States. To the casual observer the vegetation in this section is very similar to that with which we are familiar at home. White oak woods are predominant and some of the trees are very large and old. In many places there are thick growths of rhododendrons (laurels) and in damp places such as along ponds and creeks there are spruces and firs (possibly introduced) and cane. There are also patches of cedars and box woods. In some sections the woods are extensive and cover whole hills, while in other places they are smaller and usually completely fenced, sometimes with chicken wire to keep out predators.

A list of the birds seen in Scotland and England follows (corrections and additions to the list made after my return home are shown in parentheses, C.O.H.Jr.):

(Scotland) - Jan. 30 & 31, 1945

1. Scoter - larger than mallard, apparently solid black. (Common Scoter.)
2. Shearwater - about size of common tern - white with grayish back. (Fulmar.)
3. English Sparrow.
4. Herring Gull. (Adult plumage.)
5. Ring-billed Gull. (Herring Gull - second year plumage.)
6. Lesser Black-backed Gull. (Greater Black-backed Gull.)
7. Gull - something like our Bonaparte's Gull. (Northern Black-headed Gull - ad. winter plumage, and Kittiwake - imm.)
8. Gull - (Northern Black-headed Gull - summer plumage.)
9. Gull - (Herring Gull - ad., about third year.)
10. Gull - (Common Gull - ad. winter plumage.)
11. Gull - (Kittiwake - ad. winter plumage.)

(England) - February 1 to 5, 1945

1. English Sparrow.
2. Starling.
3. Grackle - also has call something like our grackle - has size, proportions, and color of our boat-tailed grackle but may not have been a blackbird at all. I saw it at a distance. (No grackles in England, may have been a magpie.)
4. Hawk - falcon - size and actions like our sparrow hawk. (Kestrel.)

5. Magpie - size of grackle or slightly larger - black with white in wings and tail (?).
6. Crow - about size of our fish crow - has white at base of bill. Very common. (Rook.)
7. Quail - larger than our bobwhite - short-tailed, brown. (Hungarian Partridge.)
8. Gull - something like our Bonaparte's Gull; same as #7 above^{list}. (Northern Black-headed Gull.)
9. Lesser Black-backed Gull. (Greater Black-backed Gull.)
10. Ring-billed Gull. (Common Gull.)
11. Heron - colored something like Great-blue Heron, but smaller I think. (Common Heron.)
12. Heron - same size as above but dark brown. (Purple Heron.)
13. Crow - a little larger than the other crow I saw and without the white face; common. (Carrion Crow.)
14. English Pheasant - 1 cock seen.
15. Dove - size of our mourning dove but with square-tipped tail. (Turtle Dove.)
16. Rock Dove.
17. Mud hen - looked like our Fla. Gallinule. Very common. (Moor Hen.)
18. Coot - one seen.
19. Finch - a little larger than English Sparrow. Male with dull reddish head and breast, white patches on shoulders and on either edge of the tail. Female, red replaced by brown. Common. (Chaffinch.)
20. Goldfinch - several - has call similar to our Goldfinch. I haven't gotten a close look at it.
21. Titmouse - about size of our Chickadee, but with different head markings and with yellowish breast. (Blue Titmouse.)
22. Crow - may be same as #6 but I think it is a little smaller and with shorter tail. Has call something like red-bellied woodpecker. It is very common but I haven't gotten a close look at it. Occurs in large noisy flocks. (Jackdaw.)
23. Robin - solid black, bill yellow - size of our robin - likes pines - is shy. Several seen. One dead found. (Blackbird. A species of thrush similar to our Robin, except in color.)
24. Titmouse - larger than our Chickadee but with similar head markings. Black of throat extends down to middle of breast; breast and belly yellow. (Great Titmouse.)

25. Mallard - 2 (pair) on pond on country estate.
26. Hawk - buteo - large - whitish. (Buzzard Buteo buteo.)
27. Wren - like our house wren in size and color but with short red tail like winter wren. (Wren Troglodytes t. troglodytes.)
28. Dove - large - nearly as large as Cooper's Hawk - has black and white-banded tail - white ring around neck. Also possibly white on shoulders. (Ring Dove or Wood Pigeon.)
29. Titmouse - just a little larger than our gnatcatcher and with very long-forked tail - big whitish patches on wings like sapsucker. (Long-tailed Titmouse.)
30. Titmouse - almost exactly like our Chickadee in almost every respect. (Coal Titmouse.)
31. Wagtail - lives in fields, walks, wags tail. We have nothing like it. Black and white. (Pied Wagtail.)
32. Nuthatch - size of our white-breasted nuthatch but looks more like brown-headed. (Nuthatch Sitta europaea affinis.)
33. Woodpecker - is size of our Flicker and looks something like it except that it has green back and yellow rump. (Green Woodpecker.)
34. Finch - size of goldfinch - has red face, blue back of head - white wing-bars. (Chaffinch.)
35. Finch - slightly smaller than goldfinch - has bright yellow patches in wings and tail; main color appeared to be black - had short tail - was in field. (Goldfinch.)

February 9, 1945 Somewhere in France Letter Twelve.-So far I don't like France much. In the first place it's wet and keeps getting wetter. Secondly, I haven't seen a single bird except the House Sparrow, and only one of them.

February 11, 1945 Somewhere in Belgium Letter Fifteen.- Dear Folks, I've seen very few birds since I've been on the continent, less than half a dozen kinds. I guess Crows and House (or English) Sparrows are all that I have identified.

February 13, 1945 Somewhere in Germany Letter Seventeen.- ...It seems hard to believe that in the short time since I have been on the wrong side of the Atlantic, I have already been in, or seen eight foreign countries. It has been a very educational trip, but I have seen quite enough now and am ready to use the return portion of my round trip ticket the moment they will let me. That can't be too soon either. Much of the countryside which I have passed through is very beautiful, despite the scars of war, and has been well worth seeing. I've seen several famous cities, too. The parts of Europe which I've been in seem to be as rainy or may be even rainier than Blacksburg, and you know how rainy that is. The season seems to be advanced several weeks over

that at home. I haven't seen any birds of interest for a long time now, but all that I saw when I first got over here made up for that.

February 15, 1945 Somewhere in Germany Letter Twenty.- ...Today the weather has made a drastic change for the better. It's warm and sunny and quite spring-like. I even saw a yellow butterfly this morning. I've seen lots of interesting enemy installations and equipment since I've been here - pill boxes, dragon-tooth belts, wrecked tanks, all sorts of small arms and ammunition, and I've heard a good many V-1 buzz bombs, though I haven't seen any yet. They seem to travel pretty slowly and make a loud noise which sounds something like an out-board motor.

February 19, 1945 Somewhere in Germany Letter Twenty-three.- ...It's spring in Germany. There are yellow butterflies and other insects in the air. Willows are in bloom, birches too. The commonest birds hereabouts seem to be Starlings and House Sparrows. I haven't seen many others: a finch, crows, and that's about all. There don't seem to be many birds around. As for other wildlife, I simply haven't seen any.

February 21, 1945 Somewhere in Germany Letter Twenty-five.- I'm sending in three separate envelopes the sketches and notes on the birds which I saw when I first came over here. If my observations have been keen enough you should have some fun identifying the birds from the book Clyde Patton sent you. (The list of birds mentioned here follows Letter #11. Ed.) It's been a month today since I got my last letter.

February 27, 1945 Somewhere in Germany Letter Thirty-one.- Dear John, Have you seen the first Robins, Grackles and Redwings of the season yet? If you haven't I guess you will be in a day or so. Be sure to have daddy take you on lots of walks this spring and go down to the lakes every day if you can. March is usually the best month for ducks. I don't have time to write more now, but I'll keep you posted on anything I see in the way of birds. Please you keep me posted too.

February 27, 1945 Somewhere in Germany Letter Thirty-two.- ...It finally happened - I got a letter - the one you wrote January 18 just after you found that I was leaving.

March 3, 1945 Somewhere in Germany Letter Thirty-four.- ...I've seen a lot of Germany in the last few days, and the more I see of it the sorrier I am that such a beautiful and potentially rich country has to be used for war rather than for peaceful occupations. I can't see why the German people aren't satisfied with the country they have and leave other people's countries alone.

March 5, 1945 Somewhere in Germany Letter Thirty-eight.- ...Yesterday I was out looking around and found a set of two hundred picture cards of German birds which are very good. I rather think I'll send them home, since you have to carry on your person everything you own over here.

March 7, 1945 Somewhere in Germany Letter Thirty-nine.- ...Today was the A-Number one, red-letter day: I got sixteen letters tonight. The other fellows said I was lucky to get mail so soon. One boy who was with me back in Aachen hadn't gotten a letter since October, and yet had written home every day. Can you imagine being without mail for that long?

It really means a lot to have correct fitting glasses. The ones issued me while I was in Aachen fit very well, and I believe correct my eyes about as well as is possible. They don't hurt my eyes to wear them either. I don't have to see especially well to carry ammunition in a mortar squad anyway. I consider myself very lucky to have been assigned to the weapons platoon rather than to one of the rifle platoons. I'm in the third squad of the fourth platoon of G Company of the hundred and twentieth infantry regiment of the thirtieth division of the ninth army. Bill McIntosh is over here somewhere too now. The letter I got from him, written in January, was from Fort Meade. He and I were there at the same time and didn't know it.

I really like the bird cards that I picked up and wish that I had some way to keep them, but think that they would be more valuable at home. I'll just keep on making sketches of the birds I see. I found a fairly good pair of Jerry field glasses, so I should be able to do a little better observing now. Since I've been in Germany I've seen several kinds of finches, magpies, crows, and a great many soaring hawks. I haven't been able to tell anything about the hawks and don't imagine I will either since they're a bird you have to be familiar with to identify since the numerous kinds are so similar. Of course there are House Sparrows and Starlings galore.

March 10, 1945 Germany Letter Forty-two.- ...There are lots more birds in this part of Germany than there were at Aachen but I haven't gotten a chance to identify any yet. For the first time since I left England I have heard birds with pretty songs. I was beginning to think that they didn't have any over here. I saw my first German mammal today - a red fox in a wide flat field. We flushed it out near the road and it ran out of sight like a streak of lightning.

March 11, 1945 Germany Letter Forty-four.- ...Today I saw a very strange and amusing spectacle. I've seen rabbits hunted with everything from bare hands and bows and arrows to shotguns and submachine guns, but never before with a mortar. We were practicing firing in a wide flat grassy field when suddenly a large jack rabbit appeared out in the middle of where we were firing. I got out my binoculars and realized at once that it had been hit by shrapnel and could only hop along - it couldn't run. The boy on the mortar began to fire at the rabbit and though the shells burst all around it as it hopped along, it nevertheless escaped further injury when it finally got so close to a roadway that no more rounds could be fired in its direction. It did not seem to be unduly upset by the loud noises around it and would often hop directly toward a burst rather than away from it. I kept my glasses on it the whole time. It continued to travel in one general direction no matter where the shell burst. Thus, about ten or fifteen rounds of ammunition were expended in this strange rabbit hunt.

March 12, 1945 Germany Letter Forty-five.- Dear John, You don't have anything on me with the "Black Widow", I've finally seen some too, though not nearly so well as you. One thing that I have seen that I hope you never see is the buzz bomb. I have seen one at very close range in the daytime. Another thing that I've seen that you might be interested in is windmills. The Cologne Plain is so flat that they have windmills there just as they do in Holland. A lot of wooden shoes are worn there too. One of the main crops of that section is sugar beets and another is cabbage. Believe me, a field of rotting cabbages or beets can really stink, and over here there are millions and millions of acres rotting. I don't understand why the German farmers didn't harvest their

crops last fall. Here is another note of interest - in this land of total war, farm machinery is hard to replace. Thus, rather than putting the machinery under cover in barns or towns where it would likely be destroyed in fighting or bombing, it is strewn and scattered at wide intervals all over the fields where it is subject to rust but not so likely to be destroyed.

March 12, 1945 Germany Letter Forty-seven.- ...Today was like Christmas. For some reason a bunch of rations caught up with us and we were simply flooded with them. One of the boys in my room got a Christmas package mailed back in October. So you can see then why this might seem like Christmas. It's spring outdoors though, with some of the trees budding green and many of the cultivated flowers such as snowdrops and daffodils in bloom. I thought the season was advanced over that at home but I guess it's not after all, and rather is about the same. We had snow as late as a week ago.

March 13, 1945 Germany Letter Forty-eight.- ...I noticed today for the first time that farmers all along the way were plowing and people in the towns were spading up their gardens. I've seen some new birds in the past few days - magpies, skylarks, rooks, gnatcatchers or their equivalent, and chickadees - also robins.

March 14, 1945 Germany Letter Forty-nine.- Dear John, Today has been a beautiful sunny spring day and I had a grand time for a few minutes this morning walking around the garden looking at birds with my field glasses. I got quite a few new ones for my German list and a couple of new ones for my life list. One of the new ones was a black and yellow wagtail which had head markings which reminded me of the Golden-winged Warbler and which was walking around the garden wagging its tail as wagtails have the habit of doing. The other was a brown vireo-like bird which was singing prettily in the hedges. I also saw a wren, and the other day I saw what I thought was a skylark. Having the binoculars certainly does make a difference, it makes observing seem more like observing.

Germany Letter Fifty-one.- Dear John, You may not be familiar with this security system. As I understand it, after twenty days have elapsed it is permissible to disclose certain events and names of localities without violating censorship rules.

I've seen several more new birds recently, including Mallard and Gallinule, and have found that the bird which I thought was a skylark actually is that, beyond a doubt. I've also seen hundreds of other birds of this region, but they weren't such that I could add them to my list. I'm disappointed in the skylark. I'd read so much about it and its beautiful song that I thought it must be something very wonderful. Actually, though, I think that there are dozens and dozens of American birds with prettier songs. Though it does have a right pretty song, I think its main attraction is its habit of hanging in mid-air for minutes and minutes singing incessantly all the while.

March 17, 1945 Germany Letter Fifty-two.- ...Can you imagine that I've gotten so used to sleeping on the floor with nothing between me and the floor but a folded blanket and my sleeping bag, that I'd just as soon sleep there as on a bed? Well, I have. At first, my shoulders and hips were always sore, but now they've gotten so hardened that I don't even notice that the floor is hard. I guess I'm as hard as the floor now. I'll still be happy to go back to sleeping on a bed, though, when I get home.

Did I ever tell you that the boat that I came over on was the *Queen Mary*? Can you imagine me traveling on such a huge and famous vessel as that? It was certainly a thrill I can tell you. I hope I am fortunate enough to go home on it or one of the other big boats when the time comes.

March 20, 1945 Germany Letter Fifty-three. -The weather has been beautiful and the apple trees will be in bloom in a week or ten days. I've seen English Sparrows fooling around with nesting material and robins are hopping around on the lawns. It's spring all right. By the time you get this letter it'll be Easter and spring at home, too.

March 29, 1945 Germany Letter Fifty-six. -Well, I came through the Rhine crossing safe and sound and none the worst for the experience. Until now we haven't stopped long enough for letter writing. I had been wondering, and probably you had too, what my psychological reaction to battle would be and what effect it would have on me. Well, I have the answer - it had no effect on me whatever. I was very surprised to find that I wasn't afraid and could remain cool and unaffected while others worried and fidgeted and sweated out attacks. Actually, I was much more upset by the thought of going overseas when I was back in the States than I ever have been over here. I finally made up my mind that if I did everything I could to take care of myself then God would do the rest, and I haven't been worried since. Of course that isn't to say that I don't pray for protection when I get in a seemingly tight spot, though.

I will long remember 0204 o'clock of the morning of March 24, for at that moment, amid the deafening roar of our artillery, our seven man storm boat nudged out into the smoke covered waters of the Rhine - thirty seconds later I was on Hitler's side of the river and was entitled to wear another battle star on my ETO ribbon. This was H hour plus 4 minutes, D-Day, of the biggest offensive since Normandy. Actually, though, for those of us who were to participate, the adventure had begun weeks before. Not long after I was assigned to this company I found that we were shock troops of an assault division, and from what I have been able to learn of the past history of my battalion this has been true ever since it's been in the ETO. After spearheading the Roer crossing, the division moved back to Holland for training - that couldn't mean but one thing; more rivers to cross. The Maas River, with its swift current, offered good practicing ground.

While we were in Holland I had a chance to go to Maastricht and had a grand time. I went sight seeing, went to a movie, went to the Museum, but spent most of my time in the Red Cross Club. By far the most interesting, though, was the Museum of Natural History, which had a very representative collection of Dutch fauna and flora. Of course I was most interested in the birds and mammals, and they had good collections of both. I was shown through the Museum by a young Dutchman who spoke English fluently. He was an assistant curator, whose specialty was shell collections but whose hobby was bird banding. He was quite friendly and I had a very enjoyable talk with him. His banding station was out in the country and was operated for him by a farmer - he went around once a day to band the birds. It seems that over here, they use the double, half-over net almost exclusively rather than wire traps like we use. Also they use call birds as bait rather than grain. We had a good time comparing trapping methods and he invited me to go with him to band the birds if I could get another pass to Maastricht sometime. In the Museum he pointed out the common birds which I should look for and helped me identify

some I'd already seen. I was much interested in the Dutch names for some of the birds which are the same in both Holland and America - one I remember in particular was the Black-crowned Night Heron; the Dutch name for it was Nacht-storch - Night Stork. This fellow knew Manville from the University of Michigan Museum, and it seems they had collected and banded bats together in the caves near Maastricht.

In the process of this attack I picked up two pistols, a .38 and a .25, two good pocket knives, two good pocket scissors, a good fountain pen, a pack full of candles, so I'm all fixed now, with all the things I had lost or broken, replaced. I traded off the .38 for a fine pair of Heinie field glasses (6 x 30) and throw away the old ones I had. The lenses were pretty badly scratched on the old pair. This new pair has rain guard, carrying case, and all, so I should be able to do better observing now.

The other day I was on guard in an outpost and 88's from a tank up the road a piece were making me wish that the minutes of my guard would pass faster when suddenly I noticed that the cherry trees in the orchard all around me were in full bloom. They were certainly lovely. I read that night in "S & S" that the cherry trees in Washington were in bloom too.

April 5, 1945 Germany Letter Sixty.- Dear John, I was on guard just now and saw a flock of ten white wagtails playing around nearby. I've never seen but two together before, and they were always in plowed fields. These were in the streets and lit in trees and even on housetops and were quite noisy. They are interesting birds and I enjoy seeing them. Just before we crossed the Rhine I heard something which I decided must be a cousin of our whip-poor-will. It said "poor-will" or at least it sounded that way. I'm pretty sure it was a goatsucker and not an owl, for I listened to it carefully for over an hour, while I was on guard. Incidentally, I've heard a lot of owls from time to time, but of course I couldn't identify any of them.

We moved up again the other day before I got your letter finished, so here it is Saturday afternoon and I'm still writing. It's hard to believe that just two weeks ago we crossed the Rhine, we're so far from there now. This is such a beautiful country that I just can't see why the Germans aren't content with it. The region we have passed through in the last week is as pretty as a fairybook picture, with its mountains and valleys, spruce and tamarack forests and clusters of red-roofed houses in the green valleys. This region is like I've always thought northern New York would be.

April 7, 1945 Germany Letter Sixty-one.- Dear Folks, Today has been a simply lovely spring day - a nice change after all the rain of late. All the fruit trees are in full bloom and the forests in the valleys and plains are turning green - the birches and tamaracks and hickories are especially green now. I saw some swallows yesterday and I finally succeeded in seeing some goldfinches this morning. I've been trying to see goldfinches, without success, ever since I've been over here. They are pretty but not at all like our goldfinches. I saw these close up with my field glasses. Look at the pictures in "The Birds of Mass."

April 7, 1945 Germany.- Dear Mr. Massey, I'll try to tell you some of the more interesting things I've seen in the botanical line. In England I didn't find much to write about, for their oak woods are too much like our own to be of interest. I found France the same way. Germany, though, I've found very interesting. Its forests are beautiful except for one thing; nine-tenths of

them are regimented and artificial just like the rest of the country. Here you have a beautiful stand of mature spruce, and next to them a forest of maple, with a sharp, straight line of demarcation between the two kinds of them. On the other side of the maples may be a forest of pine or oak, or birch, or maybe more spruce. Only in the more rugged mountains are the forests natural. All are completely clear of underbrush. You know how much I like spruce; I guess that's my favorite tree. In this region are the prettiest spruce forests that I've ever seen.

Sunday afternoon, 8 April 1945 Germany Letter Sixty-three.- Dear Folks, Today is a simply beautiful day, with not a cloud in the sky, yet its chilly, about like I imagine Mountain Lake would be this time of year. Unlike Mountain Lake, though, which still has leafless trees at this time of year, the trees in this vicinity are beginning to leaf. The pansies and daffodils and numerous pretty wild flowers in the forests are in bloom. I have seen my first big spruce forest in the past couple of weeks and like them as much as I always imagined that I would.

The more I see of Germany, the more I wonder how the people who live here could bear to have such a beautiful country spoiled by war. The German Heartland, though, hasn't been damaged nearly so much as the area west of the Rhine. In fact, there are large areas where there is no scar of war.

East of the Rhine we have encountered increasingly large numbers of white flags. As a matter of fact I think the Germans should adopt that as their national flag. A town that has a white flag flying from every house usually shows no war damage, but the towns that are short on flags have been really shot up by the tankers. If the tanks hit resistance in a town, they'll shoot into every house till the town is clear. You can generally tell when a house has been hit by a tank, for there is a small hole where the shell went in and a large one where it came out. Artillery simply knocks the side off the house.

Saturday, 14 April 1945 Germany Letter Sixty-four.-From what I've seen in the S & S (Stars and Stripes) and from your letters, it would seem that you've had a very "on again, off again" spring this year. They're certainly disgusting aren't they? I guess its warm now for the duration and I know you're glad. It's nice and warm here too and comfortable without a jacket, even when riding. I noticed some tulips in bloom today. I hadn't noticed any before. Evidently they don't raise as many tulips here as they do at home. As a matter of fact, now that I think of it, it seems to me that they have many less cultivated flowers here than they do at home. I've seen daffodils, tulips, pansies, crocus, and a few others that I didn't recognize. The woods are all green and there are many wild flowers in bloom. Right now the main wild flower in bloom is one with a white blossom, something like bloodroot. I think it's an anemone.

Saturday, 14 April 1945 Letter Sixty-five.- Dear John, I've been seeing lots of birds the last few days and my Germany list now stands at thirty. The most recent addition is the stork, you know, the kind that builds its nest on the top of chimneys. It's a big black and white bird. Evidently they've just gotten back from the south, since I saw two yesterday, the first time I've seen any at all. There are lots of striped yellow sparrows around now too, and many barn swallows. The more I hear the skylark, the better I like its song; it sort of grows on you. It is a very common bird and seems to occur in abundance everywhere there are open fields. I have gotten close views of it several times during the past few days with my field glasses.

April 23, 1945 Germany Letter Sixty-eight.-Do you remember me telling you about all the beautiful mountain scenery we were seeing a few weeks back? Well, I can tell you now that that was in the vicinity of the hospital and resort town of Detmold, which our company took. This is in the Teutobergerwald in the northern Harz Mountains. It was undoubtedly some of the most beautiful country that I've ever seen.

I haven't had much opportunity to observe birds recently and the only now one that I've seen is the crested lark (the Germans call it "Haubenlerche"). It's similar to the skylark but is slightly larger, lacks the white outer tail feathers, and has a prominent crest.

April 27, 1945 Germany Letter Seventy-one.- Dear John, I'll bet you're seeing dozens of new birds every day now, and I only wish I could say the same for myself, but alas, I can't. Living in town as we do has cut my bird observations to practically nothing, and for the present at least, there seems to be little that I can do about it. Barn Swallows are about the only birds that I ever see now and there are lots of them. This evening I looked at some on the electric wire just outside my window with my binoculars and as far as I could tell they looked just like our own Barn Swallow; they sound the same too. The Germans call them House Swallows. You may wonder why I see them in town. Well here's why. The German village or "dorf" isn't like the village we know in America at all. The German farmer doesn't live on his farm but lives in a "dorf" and goes out to his farm each day. His property in the town is very often enclosed by a high brick wall and includes besides his home, a barn and a garden. Usually there's a cobblestone square in the center with a big smelly pile of litter in the middle. The cows apparently spend their whole lives in the barn and the horses only get out when under harness. Under these conditions a fence is a rarity in the open farmlands.

Remember I told you sometime back that I had seen some storks and thought that they must have just come back from the south? A few days later I noticed the enclosed clipping in a German Newspaper (name censored). It reads, "The First Stork - The Storks are back. The first were seen on Sunday at the Hindenburg Bridge flying slowly downstream." NOTE: 29 April, The lieutenant had to return this letter to me because I had forgotten about the regulation which prohibits the inclusion of matter in any language except English. Thus, I had to take out the clipping which I was inclosing. I had to cut out the name of the paper too.

May 6, 1945 Somewhere in Germany Letter Seventy-seven.+Rabbits appear to be the most abundant game over here, but prevailing conditions make hunting them no sport at all. First of all, they are large, adults ranging up to at least fifteen pounds (later observations proved that this figure should have been ten, not fifteen pounds - a lot of the jack rabbit's bulk is legs), and rather sluggish. Second, they live in fields practically devoid of cover and thus become sitting duck targets. They live in burrows, which look a lot like groundhog holes, out in the middle of fields. I don't know whether they dig the holes themselves or not. Due to their large size and the scarceness of vegetation, they can be spotted at long distances, and it is not unusual to see several dozen in a day without ever getting off the road. One morning as we moved out in an attack while the ground hazes were still rising, I saw what must have been a community gathering of rabbits in a big field several hundred yards off to the right of the road. I could see at least nine rabbits in this one bunch.

Waste fields are one thing that you just don't see in the part of Germany that I've been through (Wesel to Magdeburg). All the land is either in cultivation, in forest, or in marsh and unsuited for either. Once out of the Rhineland, fences became a rarity too, since all stock is kept in barns in the villages. I have ridden for a whole day through farm land and not seen a single fence except in the towns. You have to give the Krauts credit for one good idea which could be profitably taken up in the States. On the broad open plains it was necessary to provide some concealment for convoys moving along the roads, and naturally the solution was to plant trees, but instead of planting elms or lindens as we would at home they planted fruit trees. Thus, they got concealment and a food crop at the same time. Incidentally, allied airpower must have been a real and ever present terror along Germany's highways, for at regular intervals along the roadside are deep fox holes for motorists to dive into in case of attack. Imagine such a condition back home if you can - having to be always on the lookout as you drive along so that you can slam on the brakes and dive for a hole if a plane comes in view.

The only gamebird I've seen in Germany was one lonely cock pheasant out in an open field. I guess there must be quail, but since we very seldom ever got off the road into fields there hasn't been much opportunity to see any. Likewise, I can imagine that there must have been grouse in the beautiful spruce forests on the northern fringes of the Harz Mts., but I just didn't happen to run into any.

In the mountains I saw a good many deer too, right out in the open, like the rabbits. Apparently they must not be hunted, for I often saw them in fields near towns. I remember particularly seeing two on a hillside not two miles from the large city of Brunswick. Another time when we were riding tanks, a deer appeared from somewhere and ran along parallel to the tank column not over a hundred yards away. Rifles and machine guns all along the column opened up on it, but it miraculously managed to evade the fire and even to pass through the column and nearly make its escape before it was cut down. Such incidents make me heartsick and to realize anew how wantonly destructive Americans are.

7 May 1945 Germany Letter Seventy-eight.-In answer to the question of whether I was able to attend church services when we were on the move - yes, though often the Chaplain held the service on Saturday, because Sunday seemed to be a favorite day for attack. One service I remember particularly was on the Saturday after Easter in a barn on the banks of the Weser River. The day was lovely, and the sunny fields and spruce-clad mountains and swiftly flowing river made you almost forget that there was a war on. Only a lone Me-109 every now and then shattered the illusion.

Try to plant some more spruces or firs up at the cabin (Mountain Lake) if you can possibly manage it. I've seen so many beautiful spruce forests here in Germany that I want all the more to have as many as we can at the cabin. I miss the flowering forest trees and shrubs such as azalea, dogwood, and redbud that we have at home; either they don't have such things in Germany or else they keep them out of the forests.

10 May 1945 Germany Letter Seventy-nine.- Dear John: Since the last time I wrote you, I've found another bird book, which though not so good as bird books go, is still much better than the one I had and a hundred percent better than none at all. With it, I have been able to identify all the birds I have seen down to species, that is all except one - I still don't know what the vireo-like bird back at Tuddern was; that was #2 of the sketches I sent home. (Hodge-

Sparrow. Ed.) The book was sort of an album with paste-in bird pictures and a short note under each picture, in fact, a lot like the albums that the American Wildlife Federation puts out. This one is put out by a cigarette company. There are only two-hundred and fourteen pictures, so you can see that numerous birds are not represented. The other morning I went out on the edge of town for about an hour and identified sixteen species of birds, six of which were new to my list.

Here are a few notes on some of the birds on my list. The Mason Sailer corresponds to our Chimney Swift and reminds you strongly of it, though it has a forked tail and flies faster. It flies in flocks over the towns the same as the Chimney Swift. The Cuckoo really says "cuckoo" just like the cuckoo in the clock. The Wood Warbler looks just about like our Tennessee Warbler and has a pretty song. The Goldhammer is a yellow-headed sparrow with a song somewhat like the Bachman Sparrow, though prettier. Of course the Chaffinch is the commonest bird on my list, corresponding in abundance to our Song Sparrow.

14 May 1945 Germany Letter Eighty-two.- Dear John: I've seen several new birds since I last wrote you - Bullfinch (Pyrrhula germanica), House Swallow (Hirundo urbica), House Red-tail (Erithacus titys), Gray Flycatcher (Muscicapa grisola), and Green Linnet (Chloris chloris). This brings my German list to 43. The Bullfinch is I think the prettiest German bird I've seen. I saw lots of nests of the House Swallow; they were built under the eaves of houses and looked a lot like Cliff Swallow nests. Have daddy help you find these and the other birds I have listed, in the cards I sent home. I think you'll find it interesting.

15 May 1945 Germany Letter Eighty-three.- Dear Folks, The past few mornings I have been watching birds through a 10 x 80 B. C. artillery observers scope mounted on the second floor. You just can't beat these Kraut optical instruments. I haven't seen a single one of our 6 x 30, M-3, binoculars which could compare with similar Kraut glasses. However, our 7 x 50, M-17, binocular is excellent, and if you have a chance to pick up a pair through Gov. surplus, by all means jump at the chance - make a note of that model number.

I got another new bird today - the Monk's Hedge-Sparrow (Sylvia atricapilla). It has a loud, bubbling song much like the Catbird's and even has a black cap like the catbird. That's number 44. I'm slowly but surely building up a good list of German birds.

16 May 1945 Germany Letter Eighty-four.-We are living in the utmost luxury here in a resort hotel, but despite the luxury, we're kind of cooped-up, for the surrounding dense spruce forests make excellent hiding places for Nazi die-hards and it is dangerous to venture out in small groups. Four days after V-E Day two GI's were ambushed and killed just outside of town, but since then retaliatory measures have been taken and patrols increased to the point that the danger has slackened considerably. Still I prefer to do my bird observing from the hotel window. Our platoon has the job of guarding an SS hospital too, so that gives me a good opportunity to observe birds. The other morning I saw three kinds of titmice in one tree there.

21 May 1945 Schierke, Germany Letter Eighty-seven.-This will be the first letter that I've sealed since I left home - censorship has been abolished in this theater though the base censor still spot checks.

Schierke is just a small resort town and is made up mostly of hotels and tourist homes. It's in the Harz Mountains fifteen or twenty miles west of

Wernigerode and about four miles south of Brocken, the highest mountain in all of northern Germany. The Harz Mts. aren't very large, nothing like our mountains at home. They just sit out in the middle of a big plain. From a peak I scaled Sunday afternoon I could see just about the whole range. The highest point is only about 3750 feet, but we are at a latitude comparable to Hudson Bay so it makes it seem much higher. Here at Schierke we are at about 2,000 feet, the same as at home, but the climate is like that at Mountain Lake or perhaps a little colder. The only forest tree is the Spruce (Picea excelsa), and the whole Harz is one solid forest of spruce.

I'm not sure whether I ever told you before or not, but still maybe I can add some new details about the ocean crossing. We left Pier 90 at New York on 24 Jan. at 4 P.M. and made the crossing to Greenock on the Firth of Clyde, Scotland, on the Queen Mary in five and one half days. The Queen Mary is surely a beautiful and monstrous ship. Years ago when I used to read about it and see pictures of it, I never thought I'd be riding it someday.

From Southampton we crossed the Channel to LeHavre, France, on a liberty ship and went ashore in a LCT. From there we went to a place called St. Truiden, about twenty or thirty miles north of Liege, Belgium, and from there to Aachen.

30 May 1945 Elsterberg, Germany Letter Eighty-nine.-I don't imagine you can find Elsterberg on a map since it's pretty small. It's on the Elster River nine miles north of Plauen and twenty miles north of the Czechoslovakian border and six miles west of Reichenbach.

We had a nice trip down - in perfect traveling weather, and had good sight-seeing. We rode for quite a distance on the Berlin to Munich Super Highway. I haven't had a chance to look at any birds yet, but there are lots around and their songs are largely unfamiliar, so I imagine I'll be adding quite a few to my list.

5 June 1945 Elsterberg, Germany Letter Ninety-two.-I'm proud to be in the 30th Division. According to stories I've heard, it is one of the highest rated divisions in the ETO, the most highly rated being a Russian division. At any rate its nickname, Roosevelt's SS, was not idly earned. It is truly an SS Division, composed of shock troops and used only where the going is toughest. In the Bulge, it was the 30th which bore the brunt of the drive from the north down to St. Vith to break up the Nazi attack and though it was nearly destroyed itself, it completely destroyed Hitler's 1st SS Division and a parachute division. Even the German civilians recognize the 30th as an SS outfit and by their own standards are afraid of us.

I guess you probably read that in the last days of the war the 9th Army was the largest army in the world with 21 infantry and armored divisions in 5 corps. I can't imagine where all those divisions were though for I certainly never heard of more than seven during the drive from the Rhine to the Elbe. As a matter of fact, the 2nd, 5th, and 8th armored and the 83rd infantry were the only ones that did any fighting besides the 30th. I don't know what army I'm in now - maybe the 9th still. Coming down here we passed completely through the 1st Army and are now in 3rd Army territory.

G I movies are so rotten that it was interesting for a change to see a Heinie movie yesterday. For my benefit they showed a technicolor reel on the birds of Germany, and it was so good that I secured it and am going to bring

it home with me. It is 18 mm. and it will probably be very hard to find a projector back home that size, but I'll bring it anyway. 18 mm. is standard for German movie houses.

5 June 1945 Elsterberg, Germany Letter Ninety-four.- Dear Dad, You really had good luck on the spring census and saw quite a few birds that I've never seen on that census. It's an interesting census, isn't it, and one well worth making. I believe that makes about 8 years for Blacksburg.

While you were getting a hundred and two birds on your census, my best effort to date has been 27; that, last Sunday evening from six till nine. That list follows: Cuckoo, Crow, Jack-daw, Magpie, Starling, House Sparrow, Chaffinch, Goldfinch, Skylark, Goldhammer, Barn Swallow, Mason Sailer, Cabbage Titmouse, Blue Titmouse, Willow Titmouse, Robin, Mourning Flycatcher, Mountain Wag-tail, White Brook-Wagtail, Ring Dove, Domestic Pigeon, House Red-tail, Green Linnet, Monk's Hedge Sparrow, Garden Red-tail, Mistle Thrush, and Acorn Jay.

Since I sent you the list of birds I had observed I've added six new ones making 50 for Germany and 65 for the ETO. They are, Dipper, Redthroat, Tree-piper, Garden Red-tail, Mistle Thrush, and Acorn Jay.

I've just now gotten a letter from Bill (McIntosh) and though he only lists twenty-one kinds he's seen five that I haven't: 1. Gray-backed Crow (Corvus cornix); 2. Tufted Titmouse (Parus cristatus); 3. Bluish Titmouse (Parus cyanus); 4. Horned Lark (Eremophilus alpestris); 5. Bank Swallow (Riparia riparia).

At the time of his writing he was the "Governor" of five German towns, so he didn't have much time for birds.

I've added one new animal to my list - the red squirrel. It is larger than our red squirrel, has tufted ears and is red all over.

6 June 1945 Elsterberg, Germany Letter Ninety-seven.-We were on a Sunday schedule today observing the D-Day holiday, and I spent the afternoon walking through the woods and fields nearby looking for birds. In three hours I saw twenty-three kinds, three of which were new for my Germany list: Bird Hawk (Accipiter nisus); Tree Creeper (Certhia familiaris); and Hungarian Partridge (Perdix perdix). The bird hawk which is like a small Cooper's Hawk, had a bird in its talons and was circling round and round and being attacked by barn swallows who were calling angrily.

15 June 1945 Elsterberg, Germany Letter One hundred and three.-A few of us took an interesting trip to the infamous Buchenwald Concentration Camp near Weimar the other day. On the way, we passed through Jena and saw the famous Carl Zeiss plant where lenses and other optical instruments are made. It is very beautiful in the vicinity of Jena - just like I imagine southern California would be. Jena is in a green valley surrounded by steep rock ridges with all the strata showing just like our western buttes and canyons.

This part of Saxony, between Plauen and Jena reminds me more of home than anywhere else I've been in the ETO. The ridges are wooded and the valleys in between are cultivated. There are fences, and waste fields and uncut meadows are common. Maybe they harvest more from intensively cultivated land, but this kind is more to my liking. Wheat and rye and potatoes are the main crops in

this section, and never do you see a field of cabbages, or beets such as were so common in the Rheinland and Westphalia.

I saw three new birds: Grayhammer, Bank Swallow, and Thorne Hedge-Sparrow bringing my Germany total to 56 and my ETO total to 71.

I've seen Czechoslovakia from a distance, though I haven't been in it. This brings the number of foreign countries I've seen to nine: Northern Ireland, Scotland, Wales, England, France, Belgium, Holland, Germany, and Czechoslovakia.

24 June 1945 Elsterberg, Germany Letter One hundred and twelve.- Dear John, I got up early Sunday morning and went out looking for birds till breakfast. I got my biggest list yet for Germany - 28 birds and added three to my total list, making 74 for the ETO. There just don't seem to be as many birds in Germany as there are at home. One a similar morning at home I would have gotten at least 50 or 60 kinds but here I only got 28 and saw but three other birds that I didn't identify, making a total of 31, or just half as many. My Sunday list follows: Elsterberg, Germany, 24 April 1945, 0530 - 0745 o'clock. Spruce forest, deciduous woods, rye fields, gardens: Crow, 15; Magpie, 2; Starling, 30; House Sparrow, 50; Chaffinch, 20; Skylark, 15; Goldhammer, 20; Barn Swallow, 5; Mason Sailer, 100; Cabbage Titmouse, 10; Blue Titmouse, 10; Marsh Titmouse, 10; Crested Titmouse, 3; Robin, 20; Wood Warbler, 20; White Brook Wagtail, 5; Ring Dove, 7; Cave Dove, 2; Turtle Dove, 2; Rock Dove, 1; Ring-necked Pheasant, 1; Golden-crowned Kinglet, 5; House Red-tail, 3; Green Linnet, 3; Red-throat, 12; Tree Piper, 2; Acorn Jay, 25; Nightingale, 1. Total species, 28; individuals, 399. Also seen but not identified were Reed-warbler sp.?; Tree Falcon (Merlin)?; Hedge-sparrow sp.?

If you want to look the new birds up, here are their scientific names followed by their German names: Crested Titmouse (Parus cristatus) Haubenmoise; Nightingale (Erithacus luscini) Nachtigall; Turtle Dove (Streptopelia turtur) Turteltaube.

Also, seen since my last letter: Nuthatch (Sitta caesia) Kleiber. That makes 60 from Germany.

I have a letter from Bill McIntosh ^{1/} listing the 37 birds he has seen in Germany. The ones he's seen that I haven't are: Gray Crow (Corvus cornix); Azure Titmouse (Parus cyanus); Horned Lark (Eremophila alpestris); Golden Oriole (Oriolus oriolus); Red-backed Shrike (Lanius colluria); Striated Flycatcher (Muscicapa striata) -- a total of six. Neither of us have seen any woodpeckers, kingfishers or owls.

July 4, 1945 Lorsch, Germany Letter One hundred and fifteen.- Dear Folks, You undoubtedly won't be able to find this town, Lorsch, on your maps but if you put a dot on the super-highway 35 miles south of Frankfurt a. M., and 10 miles east of Worms, that'll be where I am at this writing. I saw one new bird for my list when we were moving down here - the Red-backed Shrike. It is quite unusual to one who is used to seeing the plain gray and black shrikes of the States. Storks are very common here and I saw one on a nest atop a church steeple in town the other day.

1/ Lt. Wm. B. McIntosh, of Lynchburg, a member of the V.S.O., is with the 82nd Airborne (Paratroop) Division, which saw action in the vicinity of Hamburg, Germany. The 82nd Airborne has been mentioned repeatedly in the newspapers: as one of the divisions to occupy Berlin jointly with the British and the Russians.

There is no use for you to write anymore since I won't get the letters. In fact, they're already holding mail in New York.

August 2, 1945 Camp Lucky Strike, France Letter One hundred and twenty-one.- Dear Folks, This is my last letter from the continent of Europe. You can locate me on the map at Cany, which is a few miles inland from Fecamp. This camp, like Oklahoma City, is a tent camp and not too comfortable, but these staging and assembly areas weren't made for comfort.

There is much too much danger from mines and booby traps in this part of Europe to go looking for birds, so I haven't added any to my list since I left Germany (except I did see a coot near Amiens from the train). I'll write again as soon as I get to England and finish up my ETO correspondence there.

6 August 1945 Tidworth, Eng., U. K. Letter One hundred and twenty-two.- Dear Folks, Tidworth is near Salisbury and Andover. The Channel journey was wonderful, for the day was bright and beautiful and I saw many things of interest; among them, European Cormorants, a six motored French flying boat, etc. So long for awhile, Charles.

August 22, 1945 New York, U.S.A. New York Herald Tribune.- "The great Liner Queen Mary shoved into New York last night carrying 14,876 passengers - almost all of them veterans of heavy combat in Europe - who were welcomed in the gayest, noisiest, most colorful homecoming of troops since the end of the War.

"On board were 14,806 soldiers, nearly all men of the famed 30th, or Old Hickory Infantry Division, overjoyed to be home after ten months of combat against the Germans.

"The (81,235-ton) Queen slipped alongside the wharf at Pier 90, on the Hudson River at Fiftieth Street (shortly after midnight).

"It was the first night-time docking of the Queen Mary seen under lights since 1939, and the first peace-time crossing to the United States for the Cunard Lines since October of that year."

31 August 1945 Blacksburg, Va.- I'm writing from home now, and won't be adding any new birds to my list for a while at least, but that's a price worth paying to be back in the USA. Between Germany and home my letters didn't adequately cover my observations, and I saw several new birds during that period - the Whinchat at Lorsch, the Sorin finch at Laon, and the Hooded crow and Little owl at Andover. Gannets, Lesser black-backed gulls, and Kittiwakes were seen from shipboard the first day out of Southampton, and little Manx shearwaters were seen to mid-ocean. Wilson's Petrels were numerous on our side of the ocean, as well as other kinds of marine life - Bottle-nosed and Spotted dolphins, one of the smaller whales, sawfish, and hammer-head and killer sharks - all adding up to make an enjoyable crossing. The first land bird I saw back in the U. S. was a Song sparrow, a bird too commonplace to warrant a second glance here, but a bird sorely missed in Europe. I'm glad it was the Song sparrow's cheery song that first welcomed me back.

I spent the first couple of days after I got home checking the excellent reference books which Dr. Murray had loaned to Dad, and straightened out a few misidentifications and cases of tangled nomenclature which had resulted from my inadequate understanding of the German language. Lack of a good reference book in Germany cost me several birds which might well have been on my list. These

cases were notably among the hawks and warblers, the Reed warblers in particular. Observing as a soldier in a hostile country is not observing under the best of conditions and I hope I can go back again sometime later and find the rest of the common birds I missed this trip.

I expect that when Bill McIntosh gets home he will have a much more complete list of European birds than I, for when I left the Continent in July he already had listed 62 kinds and was adding more at the rate of four or five every time he had a chance to look for birds. He has seen several exotic birds, such as the Hoopoe, Wryneck, Woodchat Shrike, Azure Tit, and Golden Oriole, for which I searched long but in vain.

Really my father's name should be at the head of this paper and not mine, for it was his idea and his time and efforts which made it possible. I came home and found the manuscript already complete.

FINAL LIST OF E.T.O. BIRDS

January 24 - August 21

(T. A. Coward, "The Birds of the British Isles and Their Eggs," London 1933, has been followed in nomenclature. The English, scientific and German names are given.)

1. Carrion Crow Corvus c. corone (Iablenkrähe) Eng., Fr., Bel., Hol., Ger.
2. Hooded Crow Corvus c. cornix (Nebelkrähe) Andover, Eng., Aug. 10-16.
3. Rook Corvus f. frugilegus (Saatkrähe) Echt and Sittard, Hol., Mar. 7-20; Karlsruhe, Ger., July 6; Cany, Fr., Aug. 3; Shrewsbury and Bath, Eng., Feb. 1.
4. Jackdaw Corvus monedula spermologus (Dohle) Eng., Feb. 1-5; Sittard, Hol., Mar. 16; Elsterberg, Ger., June 3; Jena, Ger., June 14; Cany, Fr., Aug. 3; Andover, Eng., Aug. 16.
5. Magpie Pica p. pica (Elster) Southampton, Eng., Feb. 4; Sittard, Hol., Mar. 7-20; Elsterberg, Ger., June 3-30; Saarebourg and Nancy, Fr., July 7.
6. European Jay Garrulus g. glandarius (Eichelhäher) Elsterberg, Ger., June 3-30.
7. Starling Sturnus v. vulgaris (Star) Eng., Fr., Bel., Hol., Ger.
8. Green Linnet Chloris c. chloris (Grünling) Schierke, Ger., May 12-29; Elsterberg, Ger., June 1-30.
9. European Goldfinch Carduelis c. carduelis (Stieglitz) Weser River above Hameln, Ger., Apr. 7; Elsterberg, Ger., June 1-30; Karlsruhe, Ger., July 6.
10. British Goldfinch Carduelis c. britannica - Southampton, Eng., Feb. 1-5, Aug. 16.
11. Serin Finch Sorinus canarius germanicus (Girlitz) Laon, Fr., July 10.
12. House Sparrow Passor d. domesticus (Haussperling) Scot., Eng., Fr., Bel., Hol., Ger.

13. Tree Sparrow Passer m. montanus (Feldspörling) Rheinberg, Ger., Mar. 20-23.
14. Chaffinch Fringilla c. coelebs (Buchfink) Eng., Fr., Bel., Hol., Ger.
15. Bullfinch Pyrrhula p. europaea (Gimpel) Schierke, Ger., May 11-20.
16. Gray Hammer Emberiza calandra (Grauammer) Jona, Ger., June 14.
17. Yellow Hammer Emberiza c. citrinella (Goldammer) Ger. (June 24, yu. just out of nest), Fr., Eng.
18. Skylark Alauda a. arvensis (Feldlarche) Eng., Fr., Hol., Ger. (Schierke, Ger., only place visited which lacked the Skylark.)
19. Crested Lark Galerdia c. cristata (Haubenlerche) Magdeburg, Ger., Apr. 18.
20. White Wagtail Motacilla a. alba (Weisse Bachstelze) Hol., Ger.
21. Pied Wagtail Motacilla lugubris - Southampton, Eng., Feb. 1-5; Andover, Eng., Aug. 4-16.
22. Gray Wagtail Motacilla boarula (Weisse-Bachstelze) Sittard and Maastricht, Hol., Mar. 14-20; Elsterberg, Ger., June 3.
23. Tree Pipit Anthus t. trivialis (Baumpieper) Schierke, Ger., May 20; Elsterberg, Ger., June 24-30.
24. Meadow Pipit Anthus pratensis (Weisenpieper) Andover and Southampton, Eng., Aug. 16.
25. Tree Creeper Certhia f. familiaris (Baumlaufer) Elsterberg, Ger., June 6.
26. European Nuthatch Sitta europaea caesia (Kleiber) Elsterberg, Ger., June 22-23.
27. British Nuthatch Sitta europaea affinis - Southampton, Eng., Feb. 4.
28. Goldcrest Regulus r. regulus (Goldköpfiges) Rheinberg, Ger., Mar. 22; Elsterberg, Ger., June 24 (feeding yu. out of nest).
29. European Great Titmouse Parus major major (Kohlmeise) Hol., Ger., Fr.
30. British Great Titmouse Parus major newtoni - Southampton, Eng., Feb. 1-5; Andover, Eng., Aug. 6-16.
31. Coal Titmouse Parus ater britannicus - Southampton, Eng., Feb. 1-5.
32. Marsh Titmouse Parus palustris communis (Graumeise) Wernigerode, Ger., May 9; Schierke, Ger., May 15; Elsterberg, Ger., June 1-30.
33. European Blue Titmouse Parus c. caeruleus (Blaumeise) Barleben, Ger., May 5; Wernigerode, Ger., May 9; Schierke, Ger., May 15; Elsterberg, Ger., June 3-30.
34. British Blue Titmouse Parus caeruleus obscurus - Southampton, Eng., Feb. 1-5.
35. Crested Titmouse Parus cristatus mitratus (Haubenmeise) Elsterberg, Ger., June 24.

36. European Long-tailed Titmouse Aegithalus caudatus europaeus (Schwanzmeise) Sittard, Hol., Mar. 10.
37. British Long-tailed Titmouse Aegithalus caudatus rosous - Southampton, Eng., Feb. 4.
38. Great Gray Shrike Lanius c. excubitor (Grau Würger) Hoppenheim, Ger., July 4.
39. Red-backed Shrike Lanius collurio (Rotrückiger Würger) Plauen, Ger., June 30; Frankfurt a. M., Ger., June 30; Suresbourg, Fr., July 7.
40. Whitethroat Sylvia c. communis (W. rngrasmücke) Elsterberg, Ger., June 12-30.
41. Blackcap Sylvia a. atricapilla (Schwarzkopf) Schierke, Ger., May 14-29; Elsterberg, Ger., June 3.
42. Wood Warbler Phylloscopus s. sibilatrix (Waldlaubsänger) Wernigerode, Ger., May 9; Elsterberg, Ger., June 6-30.
43. Mistle Thrush Turdus v. viscivorus (Misteldrossel) Elsterberg, Ger., June 3-30.
44. Blackbird Turdus m. merula (Amsel) Eng., Fr., Hol., Ger. (nest, 4 eggs, June 15).
45. Garden Redtail Phoenicurus p. phoenicurus (Gartenrotschwanz) Elsterberg, Ger., June 2-30.
46. Black Redtail Phoenicurus titys (Hausrotschwanz) Schierke, Ger., May 11-29; Elsterberg, Ger., June 1-30 (feeding yu.).
47. Redthroat Erithacus r. rubecula (Rothkehlchen) Schierke, Ger., May 20; Elsterberg, Ger., June 6-30.
48. Nightingale Luscinia m. megarhyncha (Nachtigall) Elsterberg, Ger., June 24.
49. Whinchat Saxicola r. rubetra (Braunkehlchen) Hoppenheim, Ger., July 4.
50. Hedge-Sparrow Accentor m. modularis (Heckenbraunelle) Sittard, Hol., Mar. 14.
51. Dipper Cinclus c. aquaticus (Wasserramsol) Schierke, Ger., May 20-29.
52. Wren Troglodytes t. troglodytes (Zaunkönig) Southampton, Eng., Feb. 4; Sittard, Hol., Mar. 7-20; Schierke, Ger., May 20-27.
53. Gray Flycatcher Muscicapa g. grisola (Graue Fliegenschnäpper) Schierke, Ger., May 12.
54. Mourning Flycatcher Muscicapa a. atricapilla (Trauerfliegenschnäpper) Wernigerode, Ger., May 9; Schierke, Ger., May 20-27; Elsterberg, Ger., June 2.
55. Barn Swallow Hirundo r. rustica (Rauchschnalbe) Ger., Gr., Eng. (First seen Apr. 6, Detmold, Ger.)
56. House Swallow Delichon u. urbica (Hausschnalbe) Schierke, Ger., May 11-29 (many nests); Jena, Ger., June 14; Elsterberg, Ger., June 5-30; Frankfurt a. M., Ger., July 1.

57. Bank Swallow Riparia r. riparia (Uferschwalbe) Jena, Ger., June 14; Saarebourg, Fr., July 7.
58. Green Woodpecker Picus viridis virescens (Grünspecht) Southampton, Eng., Feb. 4.
59. Cuckoo Cuculus c. canorus (Kuckuck) Wernigerode, Ger., May 8; Schierke, Ger., May 9-27; Elsterberg, Ger., June 3.
60. Swift Micropus apus apus (Mauersegler) Ger., Fr., Eng. (First seen Barleben, Ger., May 5. Many nests Schierke, Ger., May 9-27; Elsterberg, Ger., June 1.)
61. Little Owl Carine noctua mira (St. inkauz) Andover, Eng., Aug. 16.
62. Buzzard Buteo b. buteo (Mäusebussard) Southampton, Eng., Feb. 3.
63. Sparrow Hawk Accipiter n. nisus (Sporber) Elsterberg, Ger., June 6.
64. Red Kite Milvus m. milvus (Rot Milan) Magdeburg, Ger., May 8.
65. Kestrel Falco t. tinnunculus (Turnfalk) Bath, Eng., Feb. 1; Munster, Ger., Apr. 1; Cany, Fr., Aug. 3.
66. Cormorant Phalacrocorax c. carbo (Kormoran) Southampton, Eng., Aug. 3.
67. Gannet Sula b. bassana (Basstölpel) English Channel up to 600 miles out of Southampton, Aug. 17.
68. Mute Swan Cygnus olor - Andover, Eng., Aug. 16.
69. Mallard Anas platyrhynchos (Stockente) Southampton, Eng., Feb. 3; Maastricht, Hol., Mar. 15; Heppenheim, Ger., July 4 (8 small yu.).
70. Common Scoter Oedemia n. nigra (Trauerente) Firth of Clyde, Sc., Jan. 31; Southampton, Eng., Feb. 5; LeHavre, Fr., Feb. 6.
71. Common Heron Ardea c. cinerea (Fischreiher) Bath, Eng., Feb. 1; Heppenheim, Ger., July 4; Southampton, Eng., Aug. 16.
72. Purple Heron Ardea p. purpurea (Purpurreiher) Bath, Eng., Feb. 1.
73. White Stork Ciconia c. ciconia (Storch) Calverde, Ger., Apr. 13; Plauon, Ger., June 30; Heppenheim, Ger., June 30-July 4 (several nests); Karlsruhe, Ger., July 6.
74. Lapwing Vanellus vanellus (Kiebitz) Munster, Ger., Apr. 1; Brunswick, Ger., Apr. 12.
75. Common Gull Larus c. canus (Sturmöwe) Firth of Clyde, Sc., Jan. 30-31; Southampton, Eng., Feb. 2-6, Aug. 16.
76. Herring Gull Larus a. argentatus (Silbermöwe) Firth of Clyde, Sc., Jan. 30-31; Bristol, Eng., Feb. 1; Southampton, Eng., LeHavre, Fr., Feb. 5&6, Aug. 3&16.
77. Great Black-backed Gull Larus m. marinus (Mantelmöwe) New York, Jan. 24; North Channel and Firth of Clyde, Sc., Jan. 30; Bristol, Eng., Feb. 1; Southampton, Eng., and LeHavre, Fr., Feb. 5&6.
78. Lesser Black-backed Gull Larus fuscus affinis (Heringsmöwe) London, Thames River, Eng., Aug. 9; Southampton, Eng., and English Channel, Aug. 17.

79. Black-headed Gull Larus r. ridibundus (Lachmöwe) Firth of Clyde, Sc., Jan. 30-31; Bristol, Eng., Feb. 1; Southampton, Eng., Feb. 4-5, Aug. 3 & 16; LeHavre, Fr., Feb. 6, Aug. 3; Weser River above Hameln, Ger., Apr. 9.
80. Kittiwake Rissa t. tridactyla (Dreizehenmöwe) Firth of Clyde, Sc., Jan. 30-31; Southampton, Eng., Feb. 6; at sea 900 mi. from Southampton, Aug. 18.
81. Wilson's Petrel Oceanites oceanicus - At sea 200 - 1400 miles out of New York, Aug. 20-21.
82. Manx Shearwater Puffinus p. puffinus (Sturmtaucher) - At sea 100 - 1700 miles out of Southampton, Aug. 17-19.
83. Fulmar Fulmarus g. glacialis (Eidsturmvogel) At sea 900 mi. out of Glasgow, Sc., Jan. 29; North Channel, Sc., Jan. 30.
84. Moorhen Gallinula c. chloropus (Grünfüßige Teichhuhn) Bath, Eng., Feb. 1; Southampton, Eng., Feb. 4, Aug. 16; Maastricht, Hol., Mar. 15; LeHavre, Fr., Aug. 3.
(Blässhuhn)
85. Coot Fulica a. atra/- Bath, Eng., Feb. 1; Amiens, Fr., July 31; Southampton, Eng., Aug. 16.
86. Stock Dove Columba o. oenas (Hohltaube) Sittard, Hol., Mar. 7-20; Wernigerode, Ger., May 9; Elsterberg, Ger., June 24-30.
87. Ring Dove Columba p. palumbus (Ringeltaube) Southampton, Eng., Feb. 3-4; Sittard, Hol., Mar. 15; Narumberg, Ger., May 29; Elsterberg, Ger., June 3-30; Saarebourg, Fr., July 7.
88. Rock Dove Columba l. livia (Haustaube) Eng., Fr., Hol., Ger.
89. Turtle Dove Streptopelia t. turtur (Turteltaube) Bath, Eng., Feb. 1; Elsterberg, Ger., June 24; Karlsruhe, Ger., July 6.
90. Pheasant Phasianus c. colchicus (Fasan) Bath, Eng., Feb. 1; Hanover, Ger., Apr. 10; Elsterberg, Ger., June 24; Reims, Fr., July 8; Andover, Eng., Aug. 10.
91. Hungarian Partridge Perdix p. perdix (Rebhuhn) Southampton, Eng., Feb. 4; Elsterberg, Ger., June 6.

Key to abbreviations:

- Bel. - Belgium
 Eng. - England
 Fr. - France
 Ger. - Germany
 Hol. - Holland
 Sc. - Scotland



The Raven

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NOTES ON SOME WARBLERS OF APPOMATTOX COUNTY

By Mortimer Marshall

The data presented here has been collected over a period of years of fairly concentrated bird-watching. It has been compiled, not as something new or startling, but rather for comparative purposes. It is always interesting to the bird-watcher to see how his observations stack up with those of others, and by mass comparisons some interesting trends may be discovered.

All of these records have been made in Appomattox County on the various farmlands surrounding my home, which lies six miles north of Pamplin. The country is typical Piedmont terrain, with chiefly second-growth deciduous forest. Most of the breeding birds have been recorded while participating in Audubon Magazine's Annual Breeding-Bird Census.

In the following annotated list, I have referred several times to the excellent bulletin by Dr. Ruskin S. Freer on "The Birds of Lynchburg, Virginia and Vicinity". In most cases my observations have agreed nicely with his. The few exceptions have been noted.

I have disregarded a few subspecies such as the Northern Parula Warbler and the Northern Yellow-throat, which may be presumed to pass through our territory. Such geographical variations are indistinguishable in the field, and if noted would merely be hypothetical.

The list follows:

1. Black and White Warbler - Mniotilta varia (Linnaeus) - regular summer resident, though never in numbers. March 28 - October 3. I find it breeding indiscriminately in both coniferous and deciduous woods.

2. Prothonotary Warbler - Protonotaria citrea - (Boddaert) - one record, August 21, 1941. A pair, presumed to be breeding, noted several times during the spring of 1944.

3. Worm-eating Warbler - Helminthos vermivorus (Gmelin) - one record, September 12, 1942.

4. Golden-winged Warbler - Vermivora chrysoptera (Linnaeus) - Rare spring transient, April 24 - May 2.

5. Blue-winged Warbler - Vermivora pinus (Linnaeus) - uncommon spring migrant. April 21 - May 7.

6. Tennessee Warbler - Vermivora peregrina (Wilson) - one record, April 21, 1943.
7. Orange-crowned Warbler - Vermivora c. celata (Say) - one record, April 23, 1942.
8. Nashville Warbler - Vermivora r. ruficapilla (Wilson) - rare transient. Freer lists it for spring only. All three of my records are for fall; September 28 and 30, 1941, and September 21, 1944.
9. Southern Parula Warbler - Compsothlypis a. americana - (Linnaeus) Abundant transient, fairly common summer resident, March 30, 1945 (freak arrival date) - October 1.
10. Eastern Yellow Warbler - Dendroica a. aestiva (Gmelin) - fairly common summer resident. April 6. After breeding here, it appears to vanish around the first of July, and I have never recorded it in the fall migration.
11. Magnolia Warbler - Dendroica magnolia (Wilson) - fairly common spring transient, May 7 - 15. Common autumn transient, September 3- October 3.
12. Cape May Warbler - Dendroica tigrina (Gmelin) - one record, September 30, 1941.
13. Black-throated Blue Warbler - Dendroica c. caerulescens - (Gmelin) Common spring transient, April 28 - May 15. No autumn records. One male sang persistently on a laurel-covered hillside up to June 16, 1945. Whether this was a Cairn's Warbler, Dendroica caerulescens cairnsi Coues, which I have never identified, I was unable to determine.
14. Myrtle Warbler Dendroica coronata (Linnaeus) - Abundant transient, less common winter resident. September 30 - May 28. This species constitutes the bulk of our Warbler flocks. Freer lists it as an "Occasional winter visitor". I find that although the main migration moves on to the southward, some birds are always present and are seen daily throughout the winter. The northward surge reaches us in mid-February, and from then on this bird is more numerous than all other warblers combined.
15. Black-throated Green Warbler - Dendroica v. virens (Gmelin)-Autumn transient in variable numbers, August 31 - October 13. Some years these birds are quite abundant; in others they are less common. I have only one spring record, April 16, 1942.
16. Cerulean Warbler - Dendroica cerulea (Wilson) - one record, April 19, 1940.
17. Blackburnian Warbler - Dendroica fusca (Müller) - uncommon transient. Spring; May 7 - 9/ Fall; September 7-15.
18. Chestnut-sided Warbler - Dendroica pensylvanica (Linnaeus) - Common transient. Spring - May 8 - 19. Autumn, August 23-October 16.
19. Bay-breasted Warbler - Dendroica castanea (Wilson) - Rare transient. Two records; September 18, 1941 - September 8, 1942.

20. Black-poll Warbler Dendroica striata (Forster) - Common spring transient, less common in autumn. Spring, May 13 - 24; Autumn, September 3 - October 13.
21. Northern Pine Warbler - Dendroica p. pinus (Wilson) - Common summer resident; possibly an occasional winter visitor. February 24 - November 6.
22. Northern Prairie Warbler - Dendroica d. discolor (Viellot) - Very common summer resident. April 11 - September 16. Next to the Hooded Warbler and the Ovenbird, this is our most abundant breeding warbler.
23. Yellow Palm Warbler - Dendroica palmarum hypochrysea -(Ridgeway) Rare transient. Two records - January 19, 1939, April 13, 1943.
24. Ovenbird - Seiurus aurocapillus (Linnaeus) - Abundant summer resident. April 17 - September 25. Our most abundant breeding warbler.
25. Louisiana Water-thrush - Seiurus motacilla (Viellot) - Probably a fairly common summer resident. The only migration dates I have are May 14 - 15, 1943, but these are probably quite late. Nest, on which female was incubating five eggs, found May 13, 1940;
26. Kentucky Warbler - Oporornis formosus (Wilson) - Rare transient. One record, May 7, 1940.
27. Maryland Yellow-throat - Geothlypis t. trichas - Linnaeus) - Common summer resident, April 1 - October 3. The bird is commonly supposed to breed near water, but I find it nesting regularly in weedy fence corners in the uplands, far from streams or marsh.
28. Yellow-breasted Chat Icteria v. virens (Linnaeus) - Abundant summer resident. April 27 - September 16. A favorable breeding area can achieve quite a high density of population.
29. Hooded Warbler - Wilsonia citrina (Boddaert) - Common summer resident. April 23 - September 29. Freer lists it as being uncommon around Lynchburg, becoming more common in the mountains, but I find it breeding abundantly in any deciduous woods which shows a sufficient substratum.
30. Canada Warbler - Wilsonia canadensis (Linnaeus) - Fairly common transient, more common in fall. Spring; May 8 - 12; Autumn, September 1 - 15.
31. American Redstart - Setophaga ruticilla (Linnaeus) - Common transient, uncommon breeder. April 8 - October 13. After breeding, this species disappears in mid-June and does not reappear until the last week in August.

Summary: Of the thirty-one species noted here, eighteen have been recorded only as transients, twelve are noted as breeders, and one can be considered a winter resident.

Pamplin, Virginia.

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BIRD MUSINGS

By Ralph M. Brown

Why do warblers on the central campus of V. P. I., nowadays prefer aphids on red maples and ironwoods to aphids on other trees? Back in the late 1920's and early 1930's, they made a beeline for a Canadian hemlock and a small black spruce. On this spruce, only twenty feet high, I have seen as many as seven different warblers. About 1935, they shifted for a year to silver and sugar maples, only a few stragglers going to the spruce and the hemlock. In the late thirties, these fickle little sprites changed their cafeterias again, this time to red maples. Then they discovered the ironwoods, and feasted on the aphids on those trees but not deserting the red maples. Why the red maples and the ironwoods? Are their aphids, perchance, sweeter to warbler taste?

And then there is the still unsolved nesting of the hooded warblers and the scarlet tanagers. Every year I see and hear both of these birds all through June long after the migration season is over. They must nest here, but never a nest have I, nor, I believe, has anyone seen.

Catbirds have nested under my southeastern office window for nine years and one pair of crested flycatchers have set up housekeeping, on the central campus, for a decade. Does it not seem that at least one of the catbirds and one of the crested flycatchers are old inhabitants? Banding would solve these problems, but I am too lazy to band the birds. Anyway I get more fun out of wondering about my bird friends.

Something else. In the mid thirties I could always find many warblers, in the early morning, on a certain hill on the right hand side of Trillium Vale. I called it "Warbler Hill". It was covered with sapling red maples and dogwood and redbud. For three years "Warbler Hill" gave me plenty of warblers. Since then, if I see three or four of the birds there I am lucky. Why did the warblers desert the hill?

Are black-throated blue and Cairn's warblers more friendly than other ones? I have found them so. Once in a wood near Washington, about 1915, I believe. I sat under some maple saplings, redbud, and dogwood, and black-throated blues were all around me, singing and eating, looking me over, and apparently enjoying my presence.

Now a mystery for sure. When Dr. Ellison A. Smyth, Jr., was observing birds, in Blacksburg, 1891-1925, he found purple martins to be "a constant but not abundant summer resident". How many purple martins have I seen here, from September, 1925 to date? ONE.

Turkey vultures seemed to be on the decrease these latter years, but last Sunday I saw twelve soaring over one locality. On the upgrade again and why? Most farmers bury their dead animals these days, obeying the law, thus depriving buzzards of their dainty fare.

Dr. Wingard's boys had a pair of crested flycatchers nesting, in a gourd in the Wingard yard. Three young were born and seemed to be in good health until they were about ready to leave their gourd home. Then mites killed them, the boys say. Holes in trees are better nesting places, for great crests, than are gourds.

In 1925, the blue jays frequented ravines east and southeast of town, they seldom were seen in Blacksburg. In the 1930's the jays began to nest in town, on the campus, and to north and northeast of the populated area. Explain it, please.

And what about the mocking birds? Farmers to the north and northeast of town say they never used to see a mocker on their farms, but that, in the last half a dozen years or so, the birds have been nesting near the farmers' homes.

Question? No more questions for this time!

V. P. I. Library
Blacksburg, Va.

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A MOLTING CARDINAL

Birds are responsive and appreciative of what man does for them, whether it be in feeding them, or providing proper protection, or in home building. Many people are interested from a scientific and economical standpoint, while many others indulge in the art of bird watching for their own enjoyment. It is the latter that has helped me in relaxation in the past few years when strife and destruction are so prevalent. I have been interested in observing a male Cardinal that has visited our feeding tray this year. In early June I noticed that he was beginning to shed some of his head feathers. The last to go were the crest feathers, until now, the latter part of July, he is entirely bald. We have nicknamed him "Baldy". In the meantime he has brought to the feeding tray a young daughter.

One could hardly imagine that this once gorgeous bird with such a prominent crest and brilliant coat of red, could present such a spectacle, but the day is not too far off when he will again be decked in a new suit, headgear and all. The only other birds that visit us who are molting in like manner are the Grackles.

Recently the heavy and continuous rains we have had around Richmond have been most disastrous for nesting birds and several nests of Cardinals which I had been observing have been destroyed.

W. Edwin Miller
Richmond, Va.

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BIRDS AS SEED CARRIERS

Since September 1940, the writer has been engaged in making a survey of the plants of the Seward Forest, a tract of 3,600 acres of land in the southeast corner of Brunswick county, Va. As the first half of each day is usually spent in field work, there has been ample opportunity for observing the birds also.

One phase of the inter-relation of plants and animals that has been of much interest to me is the way in which birds assist the spreading of plants. I can only mention a few high spots in this complicated subject, but hope that I can

call the attention of our V.S.O. members to it in such a way that they will be on the lookout for new facts.

It is a fact well known to foresters as well as ornithologists, that our common red cedar owes its wide and abundant distribution to the fact that several species of birds, notably the Cedar Waxwing, feed on the berries and scatter the seeds far and wide in their droppings. Pokeweed berries, the June berry or "service berry" and a number of trees, shrubs and herbaceous plants, including the wild cherries of several species are spread in the same manner.

Birds are not as likely to spread the seeds of the numerous plants that produce burr-like seeds, such as the cockle burr, "beggar ticks" and others, as such seeds do not cling to their feathers as well as they do to the fur of four footed mammals and the clothes of humans.

John B. Lewis,
Seward Forest, Triplett, Va.

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LEAST BITTERN NESTING IN ROANOKE COUNTY

On May 22nd, while banding immature Redwings in company with Leighman Hawkins, I found the nest of an Eastern Least Bittern (*Ixobrychus exilis exilis*) at Murray's Pond, where I have been observing bird-life for a number of years. The nest held two eggs and was located about 25 feet from shore in a sparse growth of cat-tail flags. A few dead flags had been pulled together and the tops crudely woven to form a flat nest, about 18 inches above the shallow water. The female was flushed from the nest on May 27, which at that time held four eggs. The nest was again visited on June 14, and three young birds were found, apparently three or four days old. Three days later an infertile egg was removed from the nest and the young birds banded.

Two other immature birds were observed in the same marsh on July 14, which would indicate that another pair had nested.

This is my first nesting record for this species in Roanoke County, and I believe the first one that has been reported from this part of the State.

A. O. English, Roanoke, Va.

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ROANOKE COUNTY NOTES

Black Rail. On May 13, a single bird was flushed at Murray's Pond where it was again found on May 20 and 22. On one occasion it was flushed several times and finally flew a short distance on shore, where other members of the party studied it at close range and had the opportunity of seeing the red iris of the eyes.

I have only one other record for the County, which was made on September 13, 1936, when a single bird was seen in the same marsh.

American Bittern. A single bird seen at Murray's Pond on May 13, and again on June 14, would suggest that it probably nested this year in the county.

Rough-winged Swallow. Ten or twelve pairs of birds were found nesting in an abandoned rock quarry on May 30. A single bird was seen at this site as early as March 18.

Cairn's Warbler. On June 10, a nest was found on Poor Mountain at an elevation of approximately 3200 feet. The nest was located in a hemlock sapling about three feet from the ground. While it is possible this bird may be found more common in other parts of this mountain which has an elevation of 3960 feet, only one other pair was seen or heard during the best part of a day spent in the region. The nest of the Scarlet Tanager was found at approximately the same elevation.

A. O. English and L. E. Hawkins,
Roanoke, Virginia.

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FORSTER'S TERN AND WILLETT
AT BLACKSBURG, VA.

On April 25, at 12:30 noon, four Forster's Terns were seen by me flying over the pond on the V.P.I. campus. They remained there until about 6:30 p. m. Brown and Handley were informed and they concurred in the identification. Conditions for observation were very favorable as they flew about in bright sunlight fishing with evident success and occasionally perched on signs reading "No fishing or frogging". Mr. Handley has told me that he has seen terns which he believed were Forster's on several previous occasions but has not felt sure of their identification due to poor light conditions. They were mentioned by Smyth but on the basis of a specimen sent to him from outside the County. Hence this observation appears to be first sure record of the bird for this county.

On June 3, at about 10:30 a. m., I saw a Willet (presumably Eastern) about one mile below the college pond on Stroubles Creek. It flew up as I approached and then alighted about fifty yards from the creek on the opposite side from me and remained there, silent for at least twenty minutes. The right wing was held lower than the left while in the folded position at rest indicating that it may have been injured but not sufficiently to prevent flight. I informed C. O. Handley of its presence at about 2 p. m. and he also saw the bird later that afternoon. This, so far as I can discover, is also a new record for Montgomery County.

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First and Last Observation Dates of Warblers

in Montgomery County, Spring 1945

Black and white, Apr. 19 - June 16 (SR)*; worm-eating, May 6 - May 7 (SR); Golden-winged, May 4 - May 4 (SR); Nashville, May 6 - May 7; Parula, May 7 - May 7 (SR); yellow, April 20 - June 24 (SR); Magnolia, May 6 - May 27; Cape May, May 9 - May 14; black-throated blue, May 5 - May 17; Myrtle, Mar. 30 - May 13; black-throated green, Apr. 22 - May 19; chestnut-sided, Apr. 29 - May 15 (SR); prairie

April 19 - June 3 (SR); palm, Apr. 20 - May 13; ovenbird, Apr. 22 - July 1 (SR); Louisiana waterthrush, Mar. 30 - June 30 (SR); yellow-throat, Apr. 22 - June 24 (SR); yellow-breasted chat, Apr. 29 - July 1 (SR); hooded, Apr. 30 - July 1 (SR); Canada, Apr. 29 - May 13; American redstart, May 7 - July 1 (SR); Total; 23 species. Last observations made on July 1.

John W. Murray, C. O. Handley,
Ralph Brown, Blacksburg, Virginia.

Summer resident.

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NOTES ON THE SPRING MIGRATION AT
EMORY

Weather conditions during the past spring were unusual. Warm, sunny days predominated in March and were frequent during the first half of April. By contrast, the weather in late April and through most of May was cool and cloudy, often with drizzling rain and with a snow flurry on May 4.

As nearly as can be determined, the arrival and departure dates of spring migrants were affected to some extent by these weather conditions. Those species arriving in February, March, and early April were approximately on schedule: Killdeer, Wood Duck, Feb. 24; Red-wing, Feb. 25; Fox Sparrow, Feb. 28; Bewick's Wren, Mar. 12; Pine Warbler, Mar. 15; Chipping Sparrow, Mar. 17; Brown Thrasher, Mar. 19; Savannah, Grasshopper, and Vesper Sparrows, Blue-grey Gnatcatcher, and Louisiana Water-thrush, Mar. 31; Chimney Swift, Apr. 4; Barn Swallow, Apr. 7; Yellow Warbler, Apr. 8; Whip-poor-will, Parula Warbler, and Scarlet Tanager, Apr. 15; Catbird, Apr. 16; yellow-throat and House Wren, Apr. 17. After April 17 some species continued to arrive on schedule, but many others were later than expected. A few were not recorded until June, possibly through oversight or insufficient field work: Semipalmated and White-rumped Sandpipers, Lesser Yellowlegs, and (? Alder or Least) Flycatcher, June 6, at Saltville.

Most of the winter residents had departed before the onset of cooler weather in April, but White-crowned and White-throated Sparrows were present until May 12, at least, and a Myrtle Warbler until May 20. On the latter date a Lesser Scaup and an Osprey were also recorded. The last Blackpoll Warbler was found on June 1, and the Blue-winged Teal on June 6.

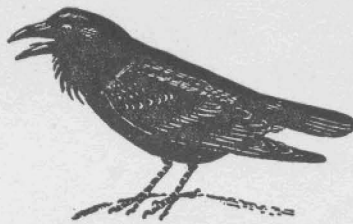
A few unusual records were made during the period. At Saltville a Raven, seen on February 9, appeared to be carrying food; and a Baldpate apparently spent the summer (June 6; August 11, molting).

The writer, his wife, and students interested in birds organized the Emory Bird Club in March, and this organization is still active and growing. The present membership exceeds 20. One of our functions was the spring census, on May 12, when 104 species were listed. A fall census is planned for September 15.

H. M. Stevenson
Department of Biology
Emory and Henry College
Emory, Virginia.

SPRING BIRD CENSUS AT EMORY

Emory, Va. May 12 -- woods north of town; to Middle Fork of Holston River and return in afternoon; mostly cloudy, with a few showers; wind east, shifting to southwest, about 5 m.p.h.; temp. 40°-70°; about 12 hours afield, with observers always in a single party. Great Blue Heron, 1; Green Heron, 1; Black-crowned Night Heron, 1; Blue-winged Teal, 7; Wood Duck, 11 (including brood of 9 small young); Turkey Vulture, 6; Osprey, 1; Sparrow Hawk, 1; Bob-white, 3; Sora, 2; Killdeer, 2; Spotted Sandpiper, 5; Solitary Sandpiper, 4; Least Sandpiper, 2; Mourning Dove, 10; Yellow-billed Cuckoo, 8; Screech Owl, 1 (heard at 9:30 p. m.); Whip-poor-will, 1; Nighthawk, 5; Whinney Swift, 20; Ruby-throated Hummingbird, 5; Red-headed Woodpecker, 3; Hairy Woodpecker, 3; Downy Woodpecker, 10; Kingbird, 5; Crested Flycatcher, 16; Phoebe, 8; Acadian Flycatcher, 7; Wood Pewee, 18; Barn Swallow, 2; Blue Jay, 11; Crow, 30; Carolina Chickadee, 9; Tufted Titmouse, 22; White-breasted Nuthatch, 3; House Wren, 4; Bewick's Wren, 7; Carolina Wren, 8; Long-billed Marsh Wren, 1; Mockingbird, 5; Catbird, 35; Brown Thrasher, 14; Robin, 43; Wood Thrush, 9; Olive-backed Thrush, 15; Veery, 4; Bluebird, 5; Blue-gray Gnatcatcher, 10; Ruby-crowned Kinglet, 1; Cedar Waxwing, 20; Starling, 50; Yellow-throated Vireo, 8; Red-eyed Vireo, 67; Warbling Vireo, 5; Black and White Warbler, 2; Worm-eating warbler, 2; Tennessee Warbler, 1; Parula Warbler, 7; Yellow Warbler, 5; Cape May Warbler, 5; Black-throated Green Warbler, 3; Myrtle Warbler, 24; Black-throated Blue Warbler, 6; Cerulean Warbler, 11; Blackburnian Warbler, 3; Chestnut-sided Warbler, 7; Bay-breasted Warbler, 4; Blackpoll Warbler, 15; Prairie Warbler, 2; Palm Warbler, 1; Ovenbird, 20; Louisiana Water-thrush, 4; Kentucky Warbler, 9; Yellow-throat, 18; Yellow-breasted Chat, 7; Hooded Warbler, 12; Canada Warbler, 2; Red Start, 9; English Sparrow, 35; Meadow lark, 10; Red-wing, 3; Orchard Oriole, 6; Baltimore Oriole, 9; Grackle, 35; Cowbird, 2; Scarlet Tanager, 17; Summer Tanager, 1; Cardinal, 27; Rose-breasted Grosbeak, 6; Indigo Bunting, 13; Goldfinch, 13; Towhee, 20; Grasshopper Sparrow, 11; Vesper Sparrow, 1; Shipping Sparrow, 6; Field Sparrow, 23; White-crowned Sparrow, 5; White-throated Sparrow, 6; Swamp Sparrow, 3; Song Sparrow, 48. Total: 104 Species, about 1006 individuals. -- J. Marsh Frere, John Knick, Robert Paasch, H. M. Stevenson.



The Raven

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Some Bird Notes from the Vicinity of Noumea, New Caledonia

By Robert J. Watson, Lt., USNR

During the first half of 1944, from January to June, as a member of the United States Naval Reserve on active duty, I was stationed in New Caledonia, an island in the South Pacific with an avifauna differing radically from that to which, as a lifelong resident of the state of Virginia, I had been accustomed. Unfortunately, the shortness of my stay on this island, coupled with the difficulty of obtaining transportation to different parts of the island and the limited amount of time which I had available for bird study, made it impossible for me to make as extensive observation as I wished; most of my observations were confined to the southeastern part of the island, and greatly to my regret, I had to leave New Caledonia without seeing many of the most interesting forms of bird life to be found here. Thus such notes and observations as I was able to make are quite sketchy in nature and do not give, in any way, an adequate idea of the bird life of the island. Also, of course, they are merely the random and haphazard notes of an amateur and have no claim to any scientific value. Nevertheless, they are here presented in the hope that there may be in them something of interest for other Virginia bird lovers.

New Caledonia is a French island possession in the South Pacific, some 250 long by approximately 30 miles wide. It is situated some 800 miles off the northeast coast of Australia, lying between latitude 20° and 23° south, and longitude 164° and 168° east. Its location, just outside the tropical equatorial belt, gives it an admirable climate, with warm, even temperatures, varying only slightly between winter and summer, and moderate rainfall. A series of mountains, known as the "Chaine Centrale", runs the entire length of the island, extending very nearly or quite to the sea on both coasts, particularly on the eastern side. The highest peak on the island is some 5400 feet in height. Noumea, the capital, a town of some 15,000 population, is located on a peninsula on the west coast of the island, near the southern tip. As New Caledonia is located in the southeast tradewind belt, the greater part of the moisture falls on the eastern, or windward side, a fact which is reflected in the heavier vegetation on this side of the island. Ethnographically, New Caledonia belongs to the group of islands known collectively as Melanesia, being inhabited by dark-skinned natives of negroid appearance. There is considerable mineral wealth on the island, most of which is as yet unexploited, with the exception of nickel and chrome which are mined in considerable quantities. A well-developed macadam highway links Noumea with most of the towns on the western side, but on the east and in the interior the roads are generally poor. The malarial mosquito, pro-

valent in some of the nearby islands is entirely absent. Snakes are also absent from the island itself; sea snakes occur in the surrounding ocean, but lizards are the only land-dwelling reptiles found here. New Caledonia is poor in mammalian fauna, having no native mammals except bats. Large fruit-bats, widely distributed among the Pacific islands, occur here; they are large enough to suggest medium sized hawk or owl when seen in flight. Several species of rats and mice have been introduced, also a species of deer.

Throughout most of the length of the island, the terrain of New Caledonia is quite mountainous, due to the presence of the "Chaine Centrale"--actually not a central chain, but a series of mountain ranges, occupying most of the island. These mountains, being steep and rough in outline and often devoid of tree-cover, give to the landscape a barren appearance not to be found, for example, among the more rolling, forest-covered slopes of the Virginia Allegheny or Blue Ridge ranges. Large areas of hill and mountainside are covered with dry grassland or low, bushy scrub; in such areas bird life is scarce. Perhaps the commonest and most widely distributed form of plant life on the island is a tree known as "niaouli", which belongs to the eucalyptus family, a large family of trees of the Australian region. The niaouli, in the form of a low, shrub-like tree with a gnarled and twisted trunk, covers vast stretches of dry hillside with its grayish-green foliage. In more moist and well-watered regions, however, this niaouli-bush gives way to a much denser and more varied growth of plant life which makes up the rain-forest. This type of vegetation occurs in the ravines and valleys, where there is available an abundant supply of rainfall from the clouds which hang over the high mountain peaks most of the time. The heaviest and most extensive rain-forests occur in the interior of the island, along the upper river valleys, where the landscape is of a wild, rugged beauty. These rain-forests, with their rich and varied flora and unusual bird life, present a fascinating subject for study.

Sources of information on New Caledonian birds were very few until the recent appearance of Mayr's work, "Birds of the Southwest Pacific". This book offers the only comprehensive treatment of New Caledonian birds to be found in the English language. Unfortunately I did not have this book available during my stay in New Caledonia, as it did not appear until after I had left. However, I was able to obtain, from the American Museum of Natural History, a check-list of the birds of New Caledonia which included nearly all of the species treated in Mayr's book. This list proved very helpful. Dr. Fritz Sarasin, a German scientist, collected extensively on the island some thirty years ago, and published the results of his studies in a work entitled Nouve Caledonie. While this work is now out of print, I was able to obtain access to it in the Museo-Bibliothèque Bernheim, in Noumea. Much of Sarasin's nomenclature is, of course, outdated, but his list was of great assistance. The collection of mounted birds in the Museo--Bibliothèque Bernheim, small and sketchy though it was, also proved helpful to American bird students studying the avifauna of the island.

As I have already remarked, most of my observations were made in the general vicinity of Noumea, on the southwest side of the island. Noumea is located on a rather hilly peninsula which, being sheltered by the mountains, is drier than the interior of the island. This peninsula consists for the most part of open unwooded country or niaouli-bush, as does the relatively flat or rolling coastal strip separating it from the mountain ranges of the interior. Some miles to the northeast of Noumea, on the "mainland" of the island, rises the Kogi ranges, on the

extreme western edge of the "Chaine Centrale". Off this range the nearest mountain to Noumea is a ridge known as "Gendarme Chapeau", which with its surrounding regions, furnishes a fairly good cross section of the various types of habitat to be found in southwestern New Caledonia. From the low-lying coast region bordering on its western edge, Gendarme Chapeau rises in a steep, abrupt angle which makes climbing rather difficult. On the hillsides the prevailing vegetation is niaculi-bush, with the much heavier forest growth in the damp, well-watered hollows. Near the top of the mountain the niaculi bush gives way to an open growth of low, dry, brushy scrub, a foot or two in height. On the eastern side of the mountain, stretching away into the interior, lies the heavily wooded valley of the St. Louis River, which flows around the mountain, past the picturesque little mission village of St. Louis, and on to the sea. My most intensive field work was done in this general region, the Gendarme Chapeau ridge, the lower St. Louis river valley, and the coastal strip between this area and Noumea. In addition, I was able to do some more superficial field work in the region lying along the coast from Tontouta, some 35 miles northwest of Noumea, to the vicinity of Plum, about 40 miles southeastward. Some observations in the interior and on the east coast, along the Noumea-Bouloupari-Thio-Canielo-La For road, completed my studies.

In keeping with the scope of this paper, I should like to emphasize once again that the following list represents simply my own personal list compiled from the Noumea region, not a complete list of New Caledonian birds, and that remarks on distribution, etc., apply only to the region described above. It is perhaps hardly necessary to remark that Mayr's Birds of the Southwest Pacific has been followed as regards nomenclature, both common and scientific.

1. Australian Silver Gull (Larus novaehollandiae forsteri Mathews). This is the only gull occurring in this region of the world. It is quite common around Noumea Harbor.
2. Crested Tern (Thalasseus bergii cristatus Stephens). A large tern resembling the Royal or Caspian tern. Sea birds are not common in the region around Noumea; with the exception of one or two occasional glimpses of other terns seen too briefly to be identified, this and the last-named species were the only sea birds I saw in this vicinity.
3. White-faced Heron (Notophox novaehollandiae nana Madon). A smallish heron about the size of the little Blue, easily recognizable by the contrast of the white face and throat with the rest of the plumage. My only record for this species was from the Thio River, some 10 or 15 miles inland between Thio and Bouloupari, northwest of Noumea.
4. Reef Heron (Demigretta sacra albolineata Gray). Common along stretches of coast near Noumea. All the records I have for this species were individuals in the gray phase.
5. Whistling Eagle Kite (Haliastur sphenurus Vieillot). Very abundant and widespread. The Buteo-like soaring habits of this species make it conspicuous and easy to observe.
6. White-bellied Hawk (Accipiter haplochrous Scudder). This small hawk is readily recognized as an accipiter by its flight and appearance in the air; the adult's striking black and white coloration makes it easy to recognize. I have several records for this species, all from the more heavily wooded upland regions.

7. Australian Goshawk (Accipiter fasciatus vigilax Wetmore). Larger than the preceding, about the size of A Cooper's hawk; often seen in the open country around Noumea.
8. Swamp Harrier (Circus approximans approximans Peale). Common in open unwooded country; resembles, in the field, the American representative of this genus, even to the white rump-mark.
9. Rock Dove (Columba livia Gmelin). Introduced and now abundant. Both this species and the English sparrow are omitted from Mayr's list of New Caledonian birds. They seem, however, to be firmly established.
10. Barn Owl (Tyto alba lifuensis Brasil). This New Caledonian representative of a familiar bird I met with several times, flushing it from the wooded regions along the lower slopes of the west side of Gendarme Chapeau.
11. Glossy Swiftlet (Collocalia esculenta uropygialis Wallace). Abundant, occurring in large numbers in open woods; usually seen flying at low altitudes, well below treetop level.
12. Sacred Kingfisher (Halcyon sancta ceneorum Brasil). Common in open country, both near the coast and inland. This small roundheaded kingfisher feeds to a large extent upon insects, and is often seen perched on telephone wires or fences above dry, open fields, some distance from water.
13. Long-tailed Triller (Lalage leucopyga montrosieri Verreaux and Des Murs). A common arboreal species, more often in rather open country; conspicuous by reason of its black and white plumage and loud notes. This and the next species belong to the cuckoo-shrike family (Campephagidae).
14. Melanesian Graybird (Corocina caledonica caledonica Gmelin). I have only two records for this species, both from the dense Gendarme Chapeau rain-forest regions. In both cases the birds kept well up in the higher treetops, and with their sluggish movements and dark gray plumage, were quite difficult to observe.
15. New Caledonian Grass Warbler (Megalurulus meriei Verreaux). I met with this bird only once, in the low dry scrub-growth atop Gendarme Chapeau; it appeared rather shy, and when flushed, would drop down again into the brush almost at once. Resembles an overgrown Caroline wren in appearance.
16. Fantail Warbler (Gerygone flavolateralis flavolateralis Gray). This little gray bird, about the size of a kinglet, occurs quite commonly throughout wooded regions.
17. Spotted Fantail (Rhipidura spilodera verreauxi Merie).
18. Collared Fantail (Rhipidura fuliginosa bulgeri Loyard). The fantails are small, active little birds, predominantly black and white in color, inhabiting thickets and undergrowth; their nervous flitting movements suggest a gnatcatcher. Both of these two species are common in this region; the latter named species seemed to me to have a somewhat wider distribution and to be more often seen.

19. Broad-billed Flycatcher (Myiagra caledonica caledonica Bonaparte). Common along streams in the wooded ravines of this region. The strikingly patterned, black and white male, and the female with her gray back and bright orange-yellow breast, are so different as to be easily mistaken for two different species.
20. New Caledonian Whistler (Pachycephala caledonica Gmelin).
21. Rufous-bellied Whistler (Pachycephala rufiventris exanthetrea Forster). The whistlers are a group of birds widespread in the South Pacific region; the New Caledonian species are rather attractively plumaged, gray-backed birds with more or less brightly colored breasts. The rufous-bellied species is one of the commonest birds of this region, particularly in the niaculi bush and other open wooded areas, where its rich, melodious warble makes it one of the most pleasing songsters on the island. The other species, which has the breast and belly rich golden-yellow instead of rufous, I met with only once, in one of the deep wooded ravines on the west side of Gendarme Chapeau.
22. White-breasted Wood Swallow (Artamus leucorhynchus melanoleucus Wagler). A rather odd bird resembling an overgrown swallow, with a somewhat similar manner of flight, and spending much of its time coasting back and forth through the air on its long wings. Often seen flying over open woods or perched on telephone wires above open fields along the roadway.
23. Glossy Starling (Aplonis striatus striatus Gmelin). A small native starling, resembling a blackbird in general appearance. In general, it takes the place of the more common Indian myna in the hills and less settled regions away from human habitations.
24. Indian Myna (Acridotheres tristis Linnaeus). Has been introduced into New Caledonia and now widespread in the Noumea area. Similar in habits to the European starling, and not unlike the latter in general appearance, though more brightly colored. It is most often seen around settlements, often associating with flocks of cattle, like our cowbird.
25. New Caledonian Crow (Corvus moneduloides Lesson). A small crow about the size of a fish crow; less noisy than our common crow, and hence less conspicuous as it flits through the trees of the forest.
26. Scarlet Honey-eater (Myzomela dibroha caledonica Forbes). The honey-eaters (Meliphagidae) constitute a very large family of the Australian region. The slender, decurved bill makes a good field work. This species is a small, warbler sized bird with a bright red head, throat, and breast, inhabiting low trees and shrubbery.
27. Silver-eared Honey-eater (Lichmera incana incana Latham). A dull-colored honey-eater about the size of a sparrow, the commonest of the family in this region, though apparently restricted to the lower altitudes, where it may be seen or heard, from almost any thicket or brush-patch. Possesses a variety of call notes, some of which are suggestive of a chat.
28. Barred honey-eater (Gudgaleonaria undulata Sperrman). This species is more often seen in the upland regions, where in fact it seems to take the place of the

last-named species to a certain extent; it is somewhat larger with a heavily barred breast.

29. Gray-backed White-eye (Zosterops lateralis griseonota Gray). This is a small, greenish-olive bird with a conspicuous white-eye-ring which gives it its name; in appearance it looks much like a vireo. The French on the island know this bird as the "lunette". The Zosteropidae comprise a large family widely distributed over this part of the world. In New Caledonia, Zosterops is one of the commonest birds, occurring in large flocks wherever there is a growth of trees. Two species occur there, but, lacking definite information on field characteristics of the two at the time, I was only able to identify this one, which has a yellow throat.
30. Red-throated Parrot-finch (Arythrura psittaceae Gmelin). This little weaver-finch is one of the most beautiful birds on the island; the body color is green, with bright red face, throat, rump, and tail. It occurs most often in open country. It is often seen as a cage bird in Noumea, in the small outdoor aviaries which are kept by a large number of residents of the town.
31. Astrild (Estrilda astrild Linnaeus). Another introduced bird, a common inhabitant of grasslands and low shrubbery; a small gray-brown weaver finch with reddish markings on head and belly.
32. English Sparrow (Passer domesticus Linnaeus). Common in Noumea and around dwellings.

In concluding this brief article, it might perhaps be well to make some mention of what is probably the most interesting bird to be found on the island of New Caledonia. This is the Kagu (Rhinoceros jubatus), a flightless bird with no near relatives, found only on this island. The kagu is a bird about the size of a large chicken, predominantly gray in color with orange-red bill and feet. As a result of its lack of flying ability, it is now greatly reduced in numbers, and unfortunately I did not have a chance to include this species on my list of birds seen in New Caledonia. M. Robert Viret, director of the Musee-Bibliotheque Bernheim in Noumea, and a biologist of considerable field experience on the island, told me that in seven years' residence there he had had but one glimpse of the kagu. It is greatly to be hoped that this bird will survive, as its extinction would mean the disappearance of one of the world's unique birds.

Fleet Radio Unit,
Box 103, Navy Yard Pearl Harbor
Navy No. 128, % F. I. O.
San Francisco, Calif.

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Late Summer Birds of Fort Valley, Shenandoah County, Virginia

By Charles O. Handley, Jr.

I spent the week, July 21-26, instructing a group of young people in bird study at the Fort Valley Organization Camp on Little Passage Creek, in the north

ern-most corner of Fort Valley, Shenandoah County, Virginia. The part of Little Passage Creek covered in this report lies directly south of Strasburg and west of Massanutten Mountain, between Mud Hole Gap and Signal Knob, at an elevation of about 1800 feet.

In this area Little Passage Creek flows down a small sheltered valley with a southern exposure, and as a result of poor drainage, there are many swampy and marshy spots at intervals along the creek supporting rare and interesting plants such as the beautiful showy Lady's Slipper, Cypripedium hirsutum, the Ragged Fringed Orchid, Habenaria lacera, and the lowly little Bladderwort, Utricularia. Nearby are small barrens where many other rare plants have been found. Actually, the valley is probably more interesting botanically than ornithologically. There are few clearings and the predominant forest growths over the area are second-growth oak-chestnut and pine-oak associations.

At the time of my visit the nesting season for most birds was over and the migration of certain species was very evidently underway. The most evident flocks of migrants were warblers, mostly Hooded and Prairie, and Red-eyed Vireos. Since most birds were in the midst of the fall molt and were, therefore, very quiet and difficult to observe, undoubtedly many forms common to the area were missed. Apparently, though the bird fauna here is little different from that found in similar parts of the Blue Ridge Foothills farther south, in Rockbridge County, for instance.

1. Turkey Vulture - common, a few observed each day.
2. Ruffed Grouse - either uncommon or elusive, seen only once, on the 25th.
3. Bob-white - one heard on the 23rd.
4. Mourning Dove - a pair was seen about the camp grounds daily.
5. Whip-poor-will - three or more heard each night in the vicinity of camp.
6. Chimney Swift - rather common, but probably not nesting in the vicinity due to the lack of adequate chimneys.
7. Ruby-throated Hummingbird - fairly common, a few seen each day.
8. Flicker - two on the 24th.
9. Filested Woodpecker - one on the 23rd.
10. Hairy woodpecker - fairly common, seen almost every day.
11. Downy Woodpecker - the most common Woodpecker.
12. Crested Flycatcher - probably more common than observations would indicate; seen only on the 24th.
13. Wood Pewee - abundant.
14. Crow - uncommon. Local residents told me that until recent years a number of Reynolds and one pair of Golden Eagles nested on cliffs on the western face of Massanutten Mountain.

15. Caroline Chickadee - abundant.
16. Tufted Titmouse - common.
17. Brown Thrasher - not seen in the valley, but probably occurs. Abundant just across the mountain at Woodstock on the 22nd.
18. Robin - seen only once; two on the camp grounds on the 25th.
19. Wood Thrush - apparently still nesting in some numbers. Only one adult seen, but two nests were found, one with three eggs and the other with four small young.
20. Cedar Waxwing - a pair frequently seen about camp.
21. Yellow-throated vireo - uncommon. Two young just out of the nest and yet too small to fly, attended by anxious parents on the 24th.
22. Mountain Vireo - frequent.
23. Red-eyed Vireo - the most abundant bird of the area.
24. Black and White Warbler - common.
25. Worm-eating Warbler - common. A pair feeding full-grown young on the 23rd.
26. Parula Warbler - one on the 24th.
27. Black-throated Green Warbler - one on the 24th.
28. Prairie Warbler - common. An old Warbler nest of the season that I found was probably of this species.
29. Hooded Warbler - abundant.
30. English Sparrow - probably occurs. Common across the mountain at Woodstock on the 22nd.
31. Purple Grackle - probably occurs. Common across the mountain at Woodstock on the 22nd.
32. Scarlet Tanager - abundant in dry woods. A pair seen on the 23rd were feeding small young. The male was easily observed at ranges as close as ten feet in bright sunlight with 8 x 40 binoculars, and appeared to be in perfect summer plumage. All other Tanagers that I saw had traces of olive, fall plumage, but all were still predominantly red.
33. Summer Tanager - not as common as the Scarlet Tanager and found most often in swampy thickets. A pair on the 23rd were feeding small young.
34. Cardinal - seen but twice.

35. Indigo Bunting - common. A pair feeding small young on the 24th.
36. Goldfinch - fairly common, a few seen each day.
37. Towhee - abundant.
38. Chipping Sparrow - common about camp.
39. Field Sparrow - two on the 25th.

Blacksburg, Virginia

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Swainson's Warbler in Appomattox County

By Morton Marshall

From September 14-18, inclusive, the weather over most of Piedmont, Virginia was stormy with strong wind and heavy rain caused by two great storms, the Florida hurricane, and a northeaster which lashed New England simultaneously. Several casual or accidental birds were reported from various points.

On the morning of September 16, 1945, during the steady rain I noticed a small bird sitting quietly under some shrubbery near our kitchen window. Attracted by something unfamiliar in its appearance, I watched as the bird began to feed among the lower branches of the shrubs. When it came to the ground again, I carefully checked the following points with the aid of a second observer. 1 - small size, about that of the average warbler, but with a short tail; 2 - a clear white line over the eye, which was the most conspicuous field mark; 3 - breast, abdomen, and sides, unstreaked dingy white; 4 - lack of eye ring or wing bars; 5 - upper part of the back grayish - olive; 6 - unstreaked crown; 7 - bird walked slowly and gracefully, jerking its tail, and apparently enjoying the rain.

After fifteen minutes of careful observation, the bird flew away. Peterson's "Field-Guide", "Natural History of the Birds", by Forbush and May, and "Birds of America" by Pearson and others, were carefully checked and the resulting opinion was that it could only have been a Swainson's Warbler, Limothlypis swainsoni (Audubon). Later in the afternoon of the same day the bird returned and was rechecked by both observers.

Both times the bird was seen at close range, in good light, by two observers, with references close at hand. Such ideal conditions for field identification come but rarely.

I am informed by Dr. J. J. Murray that Swainson's Warbler has been found nesting in rhododendron thickets in the mountains of Eastern Tennessee, West Virginia, and Southwest Virginia, near Bristol, in addition to its regular habitat in coastal swamps. The present individual might either have been blown in from the coast, or might represent an attempt by one of the western birds to reach the Atlantic in preparation for southward migration. In any case it seems an interesting record.

Pomplun, Virginia.

Studying Birds in Florida

By D. Ralph Hostetter

Having been reared on a farm in Pennsylvania, and having done most of my work in ornithology in the valley and mountains of Virginia, I became deeply conscious recently that I am "land-locked" when it comes to ornithological experiences. In order to correct this, my lack of first-hand information on marsh and shore birds, I began to plan a program of study and to include some of the more southern representatives of our avifauna. After considering a number of suggestions given by those to whom I had written for advice, I concluded that the Audubon Sanctuaries offered the best opportunities.

Soon it was arranged through the New York office, that I could spend some time in the Duck Rock Sanctuary, one of the Ten-thousand Islands (mangrove) lying off the coast of Florida, approximately 13 miles west of Everglads; and several days with the Audubon warden in the Lake Okeechobee-Kissimmee Prairie area. In both these areas the feeding, nesting and roosting grounds of the birds protected, and since the wardens are familiar with the area in which they serve and know where and how to find the birds, practically no time is lost through aimlessly hunting and wandering around.

On May 29, I arrived at Duck Rock where Mr. and Mrs. Eifler live in a small boat anchored near the Duck Rock Island. It was my privilege to occupy a smaller boat tied to their boat. In this position I had full view of the Island and could study the birds as they came into the Island in the evening to roost, and leave again in the morning for the feeding grounds. During the days several trips were taken to see the birds on their feeding grounds and to learn of any new locations where they may congregate.

The following birds were studied at Duck Rock; brown pelican; Florida cormorant; water-turkey; man-o'-war-bird; American and snowy egrets; Louisiana, little blue, yellow crowned night and Ward's herons; white ibis; roseate spoonbill and the black-whiskered vireo was heard on the Island daily, but was seen very unsatisfactorily as it flew over my observation boat. At no time was I on the Island. Flying overhead and about but boats were the black-necked stilts, herring gulls, and common terns. On one of our trips among the islands several swallow-tailed kites were observed soaring about, and on the sandy shore of one of the Islands on which we stopped, we saw the ruddy turnstones and Wilson's plovers.

Inland, at Everglade City, ground doves, red-bellied woodpeckers, southern crested flycatchers, and mockingbirds were abundant. A few English sparrows were nesting in the foliage of the royal palms, and several fish crows were observed off shore.

The stay at Duck Rock was made most pleasant and profitable both by the hospitality of Mr. and Mrs. Eifler and by the fact that the birds were very accommodating, even though they were not present in such large flocks as they would be later in the summer.

On June 5, Audubon warden, Mr. Northwood, welcomed me to Okeechobee. My headquarters were the Southland Hotel although I spent considerable time in the hospitable home of Mr. and Mrs. Northwood. Together we studied the birds of the lake shore, mud flats and the prairie.

My list of birds studied in the marshes and on the mud flats of Lake Okeechobee includes the following species; water-turkey; American and snowy egrets; Louisiana, little blue, green and Ward's herons; wood, glossy and white ibises; Florida duck and baldpate; limpkin; coot; killdeer and black-bellied plovers;

greater yellow-legs; black-necked stilt; gull-billed, least and black terns; black skimmer; fish crow and boat-tailed grackle. On one of the islands in the lake we found the next and eggs of the least tern and black-necked stilts, and a single egg of the gull-billed tern. It appears from Mr. Northwood's observations that the turkey vultures, and probably the hogs which are roaming over the shores and margins of the lake, are destroying the nests of these birds.

On the Kissimmee Prairie we saw Audubon's caracaras, Florida sandhill cranes, mourning doves, ground doves, Florida burrowing owls, one adult and fledgling Florida nighthawk (flushed), red-bellied and red-cockaded woodpeckers, southern crested flycatchers, blue jays, Florida brown-headed nuthatches, loggerhead shrikes, white-eyed vireos, Florida yellowthroats, summer tangers, Florida cardinals and white-eyed towhees. During the evening from my hotel window the song of the chuck-will's-widow could be plainly heard. A number of more familiar species such as yellow-billed cuckoo, ruby-throated hummingbird, flicker, kingbird, purple martin, carolina wren, mockingbird, brown thrasher, bluebird, English sparrow, meadow-lark, red-wing blackbird and Florida purple grackle, could easily be found about the town or in Mr. Northwood's lawn.

Again, my stay here was made most interesting by Mr. and Mrs. Northwood, and I was most fortunate in being able to see the birds peculiar to this section of Florida. This, in spite of the very unfavorable conditions existing at this time in the form of a great drought which has lowered the water level of Lake Okechobee considerably, and has caused practically all the marshes, swamps, small streams and canals to become absolutely dry. Relatively few birds in number of individuals were to be found as compared to normal conditions, but all species were represented in my study. The fact that the muck in the everglades is burning (smoldering) and the prairie grasses are on fire may also be disturbing to the birds and to cause them to leave for other and moister parts of Florida. At times the smoke from these fires is so dense one cannot see more than one-half mile ahead.

For superficial or more detailed bird study, I very much appreciate the use of the Audubon Sanctuaries with the companionship and guidance of the wardens.

Harrisonburg, Virginia.

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Six Rare or Unusual Birds in Montgomery County

By Charles O. Handley, Jr.

Recorded below are several observations made during the past two years in the vicinity of Blacksburg which seem interesting enough to be mentioned in The Raven. These observations again demonstrate the strategic position of Blacksburg, situated as it is at the crest of the Appalachian Mountains, in a position to receive both Atlantic and Mississippi wanderers. With these additions, the Montgomery County list is increased to 249 species and subspecies.

On October 9, 1943, the first migrant baldpate of the season appeared the College ponds, and was joined on October 16 by two more. One of these second arrivals had a small area around the eye which appeared to be dark reddish or even black in some lights, but otherwise it was like any other young baldpate. Since many immature male baldpates show no more than a trace of blackish around the eye to suggest the green patch that is to come, this individual was passed off as just another baldpate. As autumn progressed the baldpates, which numbered nine before the winter ice drove them off on December 17, assumed more and more of their nuptial plumages, but still one individual showed no sign of a green patch behind the

eye or a white forehead, even though it was obviously a male. When the flock returned to the ponds on February 10, the bird with the reddish face was still among them and little changed in appearance. In early March its face began to become noticeably redder and a few light feathers began to show in the crown. Now it was obvious that the bird which had been masquerading all winter as an immature baldpate was really an European widgeon. By mid-April it was in beautiful nuptial plumage with cream-colored forehead, red head, and gray back and flanks, all making it stand quite apart from the thirteen male baldpates which were with it on the pond. On April 26, all the widgeons seemed quite excited and the European widgeon was repeatedly uttering its distinctive call which Forbush describes as sounding like "ur-whew." The next day the widgeons were all gone. This is the only record of the European widgeon for Montgomery County and apparently the only inland record for Virginia west of Alexandria.

Dr. J. W. Murray, my brother John, and I saw a female old squaw on New River a mile and a half above McCoy on January 5, 1945. In contrast to the other ducks in the vicinity, canvasbacks, goldeneyes, buffleheads, and scaups, it was quite tame and allowed close approach. This is the second Montgomery county record for the species.

An immature female white-winged scoter spent May 9, 1943, on the College ponds and was observed several times during the day by both my father and me. It seemed small for a scoter, being no larger than a mallard, but the dark brown coloration, white speculum, and white face patches made identification certain. While there are several other inland records for Virginia, this is the first for Montgomery county.

On June 3, 1945, Dr. J. W. Murray observed a willet in a meadow along Trouble's Creek about a mile below the VPI Campus, and later in the day the same bird was again studied by my father and John. The bird's right wing hung down as though it had once been broken, but it caused it no noticeable inconvenience in flight. John saw three shorebirds at the College ponds on May 10, 1944, which from his description may have been, and probably were, willets. This species had not been previously recorded from Montgomery county, and it seems to be rare in Western Virginia.

During the period of the severe hurricane which swept up the east coast September 14-17, 1945, large numbers of terns appeared in various parts of Montgomery county. Of greatest interest were two Caspian terns and a Forster's tern which spent September 17, fishing in the College ponds. They were first seen by my father early in the morning and later were observed at odd times during the day by both of us. This is the first record of the Caspian tern for Montgomery County, and except for Professor Freer's Campbell County record, the only record for Western Virginia. On September 17, over two hundred common terns and one black tern were concentrated on New River in the vicinity of McCoy, where they found excellent fishing in the rapids. On the following afternoon, September 18, when Dr. J. W. Murray, my father, John, and I again visited the river, we found it out of its banks and the terns were no longer feeding in the rapids. The only concentration located was a mile up the river from McCoy in the vicinity of Parrott, Pulaski County, where about 100 common terns and 10 black terns were observed feeding and resting in a flooded meadow. While we were watching, a flock of some twenty of the common terns circled high over the river and disappeared to the northeast.

On the warm sunny morning of April 10, 1944, an adult male orange-crowned warbler was seen in the company of Myrtle Warblers feeding on insects among the willows at Quarry Pond, at the edge of the VPI campus. It was very tame and was observed at close range for nearly fifteen minutes. During that time all the pertinent field marks of the orange-crowned warbler - general olive-yellowish coloration,

Brighter yellow rump and under tail coverts, lack of wing-bars, broad yellowish eye ring, yellowish line extending from eye to bill, and faint streaks on breast - were noted. This warbler has been only very rarely recorded from Virginia, and apparently this is the first spring record from the State; one other record from Montgomery County is for October. --

Blacksburg, Virginia

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Recovery of a Seven-year-old Swift

By Charles O. Handley

Miss Anne Humphreys Dyer, of Charlottesville, reports having recovered a chimney swift in her residence at 1301 Wertland Street on the evening of June 24, 1945, bearing leg band No. 139-89. The bird seemed dazed when caught but was apparently fully recovered when released the following morning.

Mr. Frederick C. Lincoln, in Charge of Migratory Bird Investigation, U. S. Fish and Wildlife Service, who keeps the Government's banding records, advises that the chimney swift bearing band No. 139-89 was banded by Mrs. F. C. Laskey, Nashville, Tennessee, on September 27, 1938. Approximately six years and nine months elapsed between the date of banding and the date of recovery.

This is a good longevity record, the oldest chimney swift that I know of being a bird banded by Mr. W. K. Green at Chattanooga, Tennessee, on October 16, 1928, and recovered October 22, 1939, at Nashville, Tennessee, by Mrs. A. K. Laskey 11 years and 6 days later. Of some 15,000 chimney swifts which I helped band in southern Georgia and Virginia some years ago very few were recovered after an elapse of five years following the date of banding. The swift recovered by Miss Dyer also indicates a southwesterly fall migration of chimney swifts from the Appalachian mountain area.

It will be of interest to members of the V. S. O. who do not have access to the leading bird magazines to know that the wintering ground of the chimney swift long a mystery, has at last been found through the recovery of thirteen banded chimney swifts from the upper Amazon River valley in Peru, South America, by Indians during the fall of 1943. Incidentally, two of this group of swifts had been banded by Mr. J. B. Colhoun (formerly of Charlottesville, Virginia) at Nashville, Tennessee, during the fall of 1938, and another was banded by Mrs. F. C. Laskey at Nashville, Tennessee, on November 13, 1940. The recovery of this group of swifts was reported by Mr. F. C. Lincoln in the Auk (61:605-609, Oct. 1944).

Biology Department
V.P.I. Blacksburg, Virginia.

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1945 Breeding Bird Census ---- Lexington, Virginia

OPEN WOODLOT. Open woods, with mixed hardwoods; scattered large trees, 60 to 90 feet high; many smaller trees, thick undergrowth of shrubs and briars; lightly grazed; has been lightly cut for firewood for many years and kept in a rather stable condition. There are two openings of grass of two and a half and one and one half acres. In the center is a cabin used for overnight and vacation trips. The following, roughly in order of their abundance, are the more common trees: cedar, (Juniperus virginiana), box elder (Acer negundo), white basswood (Tilia heterophylla)

hemlock (Platanus occidentalis), scrub pine (Pinus virginiana), in one small section; black walnut (Juglans nigra), red oak (Quercus rubra), white ash, (Fraxinus americana), elm, (Ulmus americana), beech (Fagus grandifolia), white oak (Quercus alba); and shrubs: American pawpaw (Asimina triloba), Elaeagnus sp. (escaped and very common), coral berry (Symphoricarpos vulgaris), black haw (Viburnum prunifolium), staghorn sumac (Rhus typhina), dogwood (Cornus florida), red-bud (Cercis canadensis), ink-berry (Ilex glabra), strawberry bush (Euonymus atropurpureus). Size: 20 acres, triangular in shape. Location: Rockbridge County, Virginia 3 miles north of Lexington. Topography: Hillside, sloping down 100 feet to level area along the river; with rocky terraces, cut by ravines, underlain by fossiliferous ordovician limestone. Boundaries: bounded by Maury (formerly called North) River on north, across which is a steep and heavily-wooded cliff; by a narrow hard-surfaced road on south and south-east, across which is open pasture; and on west by pasture and cornfield. The grass openings make further edges. Survey: Partial census in 1942 and 1943, and full census in 1944. Coverage - 1945: April 3, 7, 16, 30: May 8, 14, 15, 24, 28: June 4, 11, 18, 21, 26: July 16: daily from July 21 to August 6, while living in the cabin. Weather: Very dry except for good rains at end of July. Census: bob-white, 2P, 2UM; mourning dove, 2N, 1P; yellow-billed cuckoo, 1N, 1Y, 1P; screech owl, 1P; ruby-throated hummingbird, 1P; flicker, 1P; red-bellied woodpecker, 1Y; hairy woodpecker, 1P; downy woodpecker, 3P; kingbird, 1P; crested flycatcher, 1Y, 1P; Phoebe, 2N; cerulean flycatcher, 1P; wood pewee, 1N, 1Y, 4P; Carolina Chickadee, 2Y; tufted titmouse, 3Y; white-breasted nuthatch, 1P; Carolina wren, 2Y, 2P; catbird, 1P; brown thrasher, 1N; robin, 1Y, 1P; wood thrush, 2N; blue-gray gnatcatcher, 2Y, 3P; yellow-throated vireo, 1Y; red-eyed vireo, 1N, 1Y, 1P; black and white warbler, 1Y, 1P; worm-eating warbler, 1Y; parula warbler, 1P; cerulean warbler, 1Y, 2P; prairie warbler, 1Y, 2P; oven-bird, 1P; yellow-breasted chat, 1N, 2P; redstart, 2Y; orchard oriole, 1P; summer tanager, 1Y; cardinal 2N, 5Y, 2P; indigo bunting, 3N, 3P; gold-finch, 2N, 4P; red-eyed towhee, 1P; chipping sparrow, 1N, 2Y; field sparrow, 4N, 1Y, 4P. Total: 41 species, 109 pairs (each item above representing a different pair). Density: 545 pairs per 100 acres. In addition several pairs of roving cowbirds deposited eggs in the territory. Frequent visitors: green heron, 1P; wood duck, 3 birds raised nearby, 30 birds being present in late summer; turkey and black vultures, several pairs nesting and roosting in the cliff opposite; kingfisher, 1P; pileated woodpecker, 1P, with young; crow, 6 or 8 pairs in cliff; Bowick's wren, 1UM, late July; Mockingbird, 1P, Bluebird, 1P, bringing young into area to feed; English sparrow, 10 at one corner; blue grosbeak, 1 male. A dozen swifts flying overhead daily; an osprey on the river in May; and American egret and an immature little blue heron in late July. Flocks of robins come in and feed on the Elaeagnus berries about August 1st. Not a single starling was seen on the place all summer, although abundant in the general region. No song sparrow has nested, in spite of the territory.

J. J. Murray.

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-- A check-list of West Virginia Birds. By Maurice G. Brooks --

Bulletin 316, Agric. Exper. Station, West Virginia University, Morgantown, W. Va., 36 pages. Maurice Brooks is making a name for himself in the study of the ecology of West Virginia birds. Here in compact but adequate form he gives us a picture of the distribution of 311 species of birds in what is probably the most interesting

ornithologically of all Eastern States, with the possible exception of Florida. This check list will be indispensable to all bird students in the nearby states; and will be interesting to workers anywhere. The price is not stated, but the Bulletin is certainly not expensive.

J. J. M.

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Christmas Census. We hope that the number of Christmas Censuses in Virginia will greatly increase this year. Rules for the census will be found in the November-December Audubon Magazine, or in the corresponding issue of any recent year. A copy should be sent to Dr. J. J. Murray, Lexington, Virginia; and another copy for the Audubon Magazine to Mrs. J. J. Hickey, 2391 Parkwood, Pittsfield, Village, Ann Arbor, Michigan. Mrs. Hickey is editor of the Christmas and Breeding Bird Censuses for Audubon Magazine. To make it still easier, if duplicate copies are sent to Dr. Murray, he will forward one to Mrs. Hickey.

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