BIRDS OF UPPER SOUTH CAROLINA: A STUDY IN GEOGRAPHICAL DISTRIBUTION

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[Concluded from the Wilson Bulletin, September, 1928, p. 191]

CHIMNEY SWIFT. Chaetura pelagica. Common summer resident.

RUBY-THROATED HUMMINGBIRD. Archilochus colubris. Common summer resident.

KINGBIRD. Tyrannus tyrannus. Common summer resident.

CRESTED FLYCATCHER. Myiarchus crinitus. Common summer resident.

PHOEBE. Sayornis phoebe. Winters in Piedmont; breeds in the mountains.

Wood Pewee. Myiochanes virens. Common summer resident.

ACADIAN FLYCATCHER. Empidonax virescens. Common summer resident. Carolinian form ranging into the mountains, to about 2500 feet.

PRAIRIE HORNED LARK. Otocoris alpestris praticola. Found in winter in the lower Piedmont, at times abundant, and ranging occasionally higher in the hills.

BLUE JAY. Cyanocitta cristata cristata. Abundant throughout the vear.

NORTHERN RAVEN. Corvus corax principalis. Once a yearly resident in the mountains, this species is apparently being driven back from its old nesting sites deeper into the mountains. Still occurs at times, especially in winter.

Crow. Corvus brachyrhynchos brachyrhynchos. Abundant throughout the year.

FISH CROW. Corvus ossifragus. This Carolinian bird is rare even in the lower Piedmont, probably on account of the distance from the coast and smaler rivers. Wm. Hahn, Jr., reports a single nest in the lower Piedmont in April, 1925.

STARLING. Sturnus vulgaris. Becoming common throughout the year about towns.

BOBOLINK. Dolichonyx oryzivorus. Common migrant, especially in spring.

COWBIRD. Molothrus ater ater. Common in lower Piedmont in winter.

YELLOW-HEADED BLACKBIRD. Xanthocephalus xanthocephalus. Accidental, at times in the winter, in the lower Piedmont.

RED-WINGED BLACKBIRD. Agelaius phoeniceus phoeniceus. Common in summer, returning in winter during warm periods, especially in lower Piedmont.

MEADOWLARK. Sturnella magna magna. Chiefly a winter resident, but some pairs have been found breeding both in the upper and lower Piedmont.

ORCHARD ORIOLE. Icterus spurius. Curiously enough, this, sometimes called an Alleghanian form, I have found breeding only in the lower Piedmont near the Austroriparian Zone. There it breeds abundantly, when further up the country one cannot be found. The wide valleys of the Broad River and the Savannah appear to invite it farther north into the upper Piedmont, locally, however.

Baltimore Oriole. *Icterus galbula*. Chiefly a migrant, but Mr. C. A. David of Greenville, found nests in his yard in several different seasons.

RUSTY BLACKBIRD. Euphagus carolinus. Common in winter, especially in lower Piedmont.

Brewer's Blackbird. Euphagus cyanocephalus. Mr. Loomis took specimens of this bird at Chester in the lower Piedmont in 1886. Forty years later Prof. Franklin Sherman and a student found specimens near Clemson College in the upper Piedmont and near the mountains. A rare winter resident apparently.

Purple Grackle. Quiscalus quiscula quiscula. Found in winter in the Piedmont, but Mr. Hahn has also found it breeding in Greenwood County.

Bronzed Grackle. Quiscalus quiscula aeneus. Reported from lower Piedmont in winter by Loomis. Abundant, at least, at times.

Purple Finch. Carpodacus purpureus purpureus. Common in winter.

English Sparrow. Passer domesticus domesticus. Abundant throughout the year.

CROSSBILL. Loxia curvirostra minor. It is somewhat strange that this bird which nests in the mountains, and winters on the coast-plain, should not be recorded, even as a migrant, in the intermediate Piedmont. Mr. N. C. Brown has reported it at Camden on the fall-line, which gives it the right to mention.

GOLDFINCH. Astragalinus tristis tristis. Common in the Piedmont in winter. Breeds in the mountains, making excursions into the upper Piedmont during summer.

PINE SISKIN. Spinus pinus. Common winter resident.

LAPLAND LONGSPUR. Calcarius lapponicus lapponicus. One record from Chester, by Mr. Loomis, January 1, 1881.

SMITH'S LONGSPUR. Calcarius pictus. Two specimens from Chester by Mr. Loomis, one, December 1, 1880, and one February 9, 1889.

VESPER Sparrow. Pooecetes gramineus gramineus. Common winter resident.

SAVANNAH SPARROW. Passerculus sandwichensis savanna. Common in winter in lower Piedmont.

GRASSHOPPER SPARROW. Ammodramus savannarum australis. Summer in lower Piedmont, and along Broad River valley still higher.

Henslow's Sparrow. Passerherbulus henslowi henslowi. Migrant in lower Piedmont.

LECONTE'S SPARROW. Passerherbulus lecontei. Winters in lower Piedmont.

WHITE-THROATED SPARROW. Zonotrichia albicollis. Common winter resident.

CHIPPING SPARROW. Spizella passerina passerina. Summer resident, but found in winter near fall-line.

FIELD SPARROW. Spizella pusilla pusilla. Common yearly resident.

SLATE-COLORED JUNCO. Junco hyemalis hyemalis. Common in winter. The Carolina variety, J. h. carolinensis, appears to visit us in very cold weather.

BACHMAN'S SPARROW. Peucaea aestivalis bachmani. Summer visitor in lower Piedmont. An Austral form apparently limited to the lower Piedmont.

Song Sparrow. Melospiza melodia melodia. Common winter resident in Piedmont; found in mountain valleys occasionally during the summer.

SWAMP Sparrow. Melospiza georgiana. Loomis records it at Chester as a common migrant; Hahn at Greenwood as a winter resident; at Greenville I have noted it only as a spring migrant.

Fox Sparrow. Passerella iliaca iliaca. Winter resident, arriving late.

Towhee. Pipilo erythrophthalmus erythrophthalmus. Common yearly resident, and of P. e. alleni, a single female was found breeding near Greenwood by Mr. Hahn, 1923.

CARDINAL. Cardinalis cardinalis cardinalis. Common yearly resident. An Austral form ranging into the mountains, at points, quite to the summit.

ROSE-BREASTED GROSBEAK. Hedymeles ludovicianus. A somewhat uncommon migrant. I have found it at Greenville only in spring.

BLUE GROSBEAK. Guiraca caerula caerula. Common summer resident to foot of the mountains.

Indigo Bunting. Passerina cyanea. Common summer resident.

PAINTED BUNTING. Passerina ciris. I have noted a single female barely above the fall-line near Columbia, May 21, 1923.

DICKCISSEL. Spiza americana. Formerly nested in lower Piedmont, as noted in Wayne's Birds of South Carolina.

Scarlet Tanager. Piranga erythromelas. Migrant in Piedmont. Breeds in mountains.

SUMMER TANAGER. Piranga rubra rubra. Common summer resident, even in mountains.

Purple Martin. Progne subis subis. Common summer resident.

Barn Swallow. Hirundo erythrogastra. Migrant in lower Piedmont.

TREE SWALLOW. Iridoprocne bicolor. I have encountered this species only on the coast-plain during migration, but Loomis records two specimens from Chester in the lower Piedmont.

ROUGH-WINGED SWALLOW. Stelgidopteryx serripennis. Common summer resident.

CEDAR WAXWING. Bombycila cedrorum. Found in higher Piedmont, or in the nearby mountains nearly every month in the year, but nests in this state remain to be discovered.

LOGGERHEAD SHRIKE. Lanius ludovicianus ludovicianus. Yearly resident, but more common in the winter. Seeking the migrans variety I have measured a specimen, taken near Greenville, with the characteristics of the present form even more marked than in specimens from Florida. An Austroriparian form often found near the mountains in summer.

RED-EYED VIREO. Vireosylva olivacea. Common summer resident. YELLOW-THROATED VIREO. Lanivireo flavifrons. A common migrant; breeds at times.

BLUE-HEADED VIREO. Lanivireo solitarius solitarius. Occasional migrant. The Mountain Solitary variety, L. s. alticolä, is a common

summer resident in the higher mountains. This is a Canadian and Alleghanian form.

WHITE-EYED VIREO. Vireo griseus griseus. Summer resident throughout Piedmont, to foot of the mountains.

BLACK AND WHITE WARBLER. *Mniotilta varia*. Common summer resident, in higher Piedmont and in mountains. Migrant in lower Piedmont.

PROTHONOTARY WARBLER. Protonotaria citrea. Of this Austral form that ranges so far north in the Mississippi Valley, I have but two records in upper South Carolina, neither above five hundred feet in regard to altitude.

SWAINSON'S WARBLER. Lymnothlypis swainsoni. Loomis found one in Chester County, and Mr. Hahn three in Greenwood, and a single nest, July 3, 1924. All these records and others are below or in the lower Piedmont, and this is an Austroriparian species.

WORM-EATING WARBLER. Helmitheros vermivorus. A Carolinian form that is migrant in the Piedmont but breeds in the mountains. Fairly common, from the lower valleys on up.

Blue-winged Warbler. Vermivora pinus. One specimen from Chester, April 30, 1887. Collected by Loomis.

GOLDEN-WINGED WARBLER. Vermivora chrysoptera. A rare migrant in Piedmont, and Loomis found it nesting near Caesars' Head. Visiting the identical spot as shown on the map, I failed to find any, some thirty years later. An Alleghanian form.

Nashville Warbler. Vermivora ruficapilla. This heretofore hypothetical species was collected near Clemson College by Mr. G. E. Hudson, April 27, 1927. (Auk, January, 1928).

Tennessee Warbler. Vermivora peregrina. A common fall migrant in the Piedmont.

NORTHERN PARULA WARBLER. Compsothlypis americana pusilla. Intergradations of both this and the typical Parula, C. a. americana occur in the Piedmont during migration. Apparently the northern form is more common as a mountain breeder.

CAPE MAY WARBLER. Dendroica tigrina. A common spring migrant about Greenville.

YELLOW WARBLER. Dendroica aestiva aestiva. Common migrant; breeds in mountain valleys, and perhaps in upper Piedmont.

BLACK-THROATED BLUE WARBLER. Dendroica caerulescens caerulescens. Both the typical form and Cairn's variety, D. c. cairnsi, are found in the Piedmont as migrants, the latter may occasionally breed in our mountains. Both are Alleghanian forms.

MYRTLE WARBLER. Dendroica coronta. Common migrant; often seen in winter.

MAGNOLIA WARBLER. Dendroica magnolia. A less common migrant.

CERULEAN WARBLER. Dendroica cerulea. Migrant, reported only from lower Piedmont.

CHESTNUT-SIDED WARBLER. Dendroica pensylvanica. An Alleghanian species breeding in the mountains. Migrant in the Piedmont.

BAY-BREASTED WARBLER. Dendroica castanea. Spring migrant in Piedmont.

BLACK-POLL WARBLER. Dendroica striata. Common spring migrant.

BLACKBURNIAN WARBLER. Dendroica fusca. Migrant. Loomis found it common in the autumn though rare in spring. My observations are rather for spring. He took specimens in the higher mountains in June.

YELLOW-THROATED WARBLER. Dendroica dominica dominica. Loomis found this common in summer at Chester in the lower Piedmont. This is an Austroriparian form. The Sycamore variety, D. d. albilora, ranges also into the Carolinian, and this form Loomis found breeding in Pickens County near, or among, the mountains.

BLACK-THROATED GREEN WARBLER. Dendroica virens. An Alleghanian species that nests in the mountains. Migrant through Piedmont.

Kirtland's Warbler. Dendroica kirtlandi. Recorded by Loomis and also by Jenness as migrant in the eastern part of the Piedmont. No other records.

PINE WARBLER. Dendroica vigorsi. Common yearly resident; common in winter.

Palm Warbler. Dendroica palmarum palmarum. As far east as Chester, Loomis found this and its variety, the Yellow Palm Warbler, D. p. hypochrysea, about equal in number in spring. I have found it very rare in any form in the higher Piedmont.

PRAIRIE WARBLER. Dendroica discolor. Piedmont migrant; in mountain valleys in summer. A species of the Austral zones.

Oven-BIRD. Seiurus aurocapillus. Migrant in Piedmont; common mountain breeder, seeming to prefer higher altitudes though a Carolinian form.

WATER-THRUSH. Seiurus noveboracensis. Migratory in lower Piedmont. Most forms according to Loomis are S. n. notabilis, or Grinnell's Water-thrush, others being intermediate with true S. n. noveboracensis, which is rare.

LOUISIANA WATER-THRUSH. Seiurus motacilla. A Carolinian form common in the mountains in summer, and migrating through the Piedmont.

KENTUCKY WARBLER. Oporornis formosus. Migrant in Piedmont; breeds in mountains. A Carolinian form.

CONNECTICUT WARBLER. Oporornis agilis. Rare spring migrant in Piedmont, by all records from Loomis and my notes. This is interesting, as the spring route of this species is supposed to barely tip the western corner of the state.

MARYLAND YELLOW-THROAT. Geothlypis trichas trichas. A common summer resident. The Florida variety, G. t. ignota, occurs along the fall-line even in winter.

YELLOW-BREASTED CHAT. Icteria virens virens. Common summer resident throughout the Piedmont, and to the tops of the mountains, though an Austral form.

HOODED WARBLER. Wilsonia citrina. Common migrant in Piedmont, and less frequent as a summer resident; breeds well up into the mountains.

WILSON'S WARBLER. Wilsonia pusilla pusilla. Loomis' record of May 10, 1887, at Chester, remains the only one, for not only upper South Carolina, but the state, except for two males taken by Mr. G. E. Hudson, near Clemson in the spring of 1927. (Auk, January, 1928).

CANADA WARBLER. Wilsonia canadensis. Migrant in Piedmont; rarer in fall.

REDSTART. Setophaga ruticilla. A common migrant both spring and fall.

PIPIT. Anthus rubescens. Migrant in upper Piedmont; in winter in lower.

MOCKINGBIRD. Mimus polyglottos polyglottos. Common yearly resident in Piedmont.

CATBIRD. Dumetella carolinensis. Common summer resident.

Brown Thrasher. Toxostoma rufum. Common yearly resident.

CAROLINA WREN. Thryothorus ludovicianus ludovicianus. Common yearly resident.

Bewick's Wren. Thryomanes bewicki bewicki. In Piedmont in winter; breeds in mountains. A Carolinian form.

House Wren. Troglodytes aedon aedon. Rare at all seasons; one breeding record from the lower Piedmont.

WINTER WREN. Nannus hiemalis hiemalis. Common winter resident.

SHORT-BILLED MARSH WREN. Cistothorus stellaris. Rare during migration.

LONG-BILLED MARSH. WREN. Telmatodytes palustris palustris Migrant at Chester.

Brown Creeper. Certhia familiaris americana. Common winter resident.

WHITE-BREASTED NUTHATCH. Sitta carolinensis carolinensis. Yearly resident at points in upper Piedmont and mountains. Would appear to be a winter resident only, at some points, which may indicate a dividing area between this and the Florida variety of the species which occurs nearer the coast, S. c. atkinsi.

RED-BREASTED NUTHATCH. Sitta canadensis. A rare migrant.

BROWN-HEADED NUTHATCH. Sitta pusilla. This Austroriparian form is a yearly resident and breeder to about 2000 feet in the Alpine regions.

TUFTED TITMOUSE. Bacolophus bicolor. Carolinian form; yearly resident

CAROLINA CHICKADEE. Penthestes carolinensis. Throughout year; Carolinian form. This and the preceding occur to the mountain-tops and down in the Piedmont regions. Of the occurrence of the Common Chickadee, Penthestes atricapillus, in winter in the lower Piedmont section there is good hypothetical evidence.

GOLDEN-CROWNED KINGLET. Regulus satrapa satrapa. Common winter resident.

RUBY-CROWNED KINGLET. Regulus calendula calendula. Common winter resident.

BLUE-GRAY GNATCATCHER. Polioptila caerula caerula. An Austral form. Summer resident, but more common during migration, in

the Piedmont; does not nest in the mountains as a rule, it would seem, though it may penetrate mountain vales.

WOOD THRUSH. Hylocichla mustelina. A common summer resident.

VEERY. Hylocichla fuscescens fuscescens. A common migrant. An accidental Willow Thrush, H. f. salicicola, was taken at Chester by Loomis, October 5, 1888.

GRAY-CHEEKED THRUSH. Hylocichla aliciae aliciae. A common migrant. Two of Bicknell's variety, H. a. bicknelli, were taken at Chester, by Loomis in the migrations of the spring and fall of 1887.

OLIVE-BACKED THRUSH. Hylocichla ustulata swainsoni. A common migrant.

HERMIT THRUSH. Hylocichla guttata pallasi. Common winter resident.

ROBIN. Planesticus migratorius migratorius. Winter resident. The Southern and Carolinian form, P. m. achrusterus, nests in the upper Piedmont and mountains, and I have found it nesting at Rock Hill in York County. Here Hickory Knob, 1200 feet in altitude, and lower eminences of the Kings Mountain range, while less than alpine in height, serve to bring Carolinian and Austroriparian more sharply together along the upper Wateree than any place I have taken notice of.

BLUEBIRD. Sialia sialis sialis. Common yearly resident.

[The foregoing list contains 220 named forms.—Ed.]

GREENVILLE, SOUTH CAROLINA.