

Breeding Birds of Passaic and Sussex Counties, N. J.

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The distribution of birds in the central and southern portions of the State of New Jersey has been fairly well established, but the counties along the northern border of the State have been very much neglected and little definite information has been recorded from that part of the State.

With a view of making the acquaintance of the region in the height of the breeding season in Passaic and Sussex Counties, Dr. William E. Hughes and Messrs. S. N. Rhoads and W. L. Baily began operations at Sterling Forest, Greenwood Lake, Passaic County, arriving there at 6 p. m. June 6th, 1909. Sterling Forest Station is the terminus of a branch of the Erie Railroad on the northern state line between New Jersey and New York, and on the eastern side of the beautiful Greenwood Lake 650 feet elevation, which is about eight miles long by three-quarters of a mile wide, extending about four miles into each state, and is flanked by mountains rising from 600 to 1,300 feet above it. From the top of these the whole country round appears as a rugged mountainous region, the Wawayanda range, the highest in view, being about 1,400 feet above sea level. Greenwood Mountain rises about 1,350 feet above the lake on the west side, being the culminating point of the rugged hog-back of the Bearfort Mountain range. A wide valley of open cultivated country sweeps southwesterly parallel to the frowning hills, covered generally with the deciduous trees of thirty to forty years' growth; hemlocks are scattered here and there, survivors of the last cutting. The outlet of the lake flows to the southeast through a rocky, precipitous gorge, along part of which the railroad cuts its way from New York City.

For a week the time was spent from sunrise to sunset, excepting during one of the rainy days, almost entirely afield. Considerable ground was covered in a great variety of country, the object being to cross the breeding ground of every species possible. Three days were spent on the two sides of the lake and in nearby mountains, climbing on the eighth to Little Pond on the top of Greenwood Mountain, where tamarack, tall spruce, and pitcher plant grew in the alder swamp just below this elevated body of water which is about half a mile in extent.

June seventh was spent at Wawayanda Lake, 1200 feet elevation, ten miles to the westward in Sussex County ; another beautiful lake two miles long and considerably higher than Greenwood, and where we saw our only Black-throated Blue Warbler. An extensive swamp of tall spruce, cedars and hemlock, almost impenetrable except for a path through the center, was disappointing in that it seemed to contain few birds and nothing new on the trip.

The ninth brought a cold, hard rain through which Rhoads and Baily drove nine miles to Macopin or Echo Lake, 1000 feet elevation, the waters of which flow northward into Greenwood Lake. Dr. Hughes left on the third day of the trip and Baily on the sixth day. S. N. Rhoads alone continued westward by railroad and wagon to Beaver Lake formerly Losee Pond and Wallkill Valley, Sussex County, where for two days he covered swamp and mountain with considerable success, carrying the number of breeding birds observed from 74 to 92, the highest mountains in these neighborhoods being of 1200 feet elevation. Mr. Rhoads paid another visit to Wallkill Valley early in August and found several additional species of much interest.

The comparative proportion of Canadian to Carolinian species deserves special comment. One might expect among this rugged mountainous region to find a reasonable number of more boreal birds, as the country is much like the Poconos in Pennsylvania and not much lower in elevation, but apparently it is just below the limit to attract these birds. The Black-throated Blue at Wawayanda Lake and a few Canadian Warblers, several on Wawayanda Lake and one or two at Greenwood Lake, were seen ; then there were the Chestnut-sided Warbler and Black-

throated Green fairly common at several places. These with the Alder Flycatcher, Veery, Bobolink and Rose-breasted Grosbeak constituted the only species that would be regarded as "boreal" from the standpoint of the lower Delaware Valley and they are for the most part Alleghanian rather than Canadian. Such an uncommon species as the Golden-winged Warbler was met with in a number of places, and the Hooded Warbler was abundant. The Carolinian element even at the higher elevations was marked and we were surprised to find such species as the Chat, the Blue-wing and Worm-eating Warblers, and the Louisiana Water Thrush. Especially interesting was a colony of hundreds of Short-billed Marsh Wrens nesting in the Wallkill Valley lowlands, where Mr. Rhoads also found a marked Carolinian element.

1. *Colymbus auritus*, Horned Grebe, one individual, probably this species on Echo Lake.
2. *Ardea herodias*, Great Blue Heron, two, Wallkill Valley.
3. *Butorides virescens*, Great Heron, two, Echo Lake ; one, Beaver Lake.
4. *Rallus virginianus*, Virginia Rail, one, Wallkill Valley.
5. *Philohela minor*, Woodcock, one Greenwood Lake ; three, Wawayanda Lake.
6. *Actitis macularia*, Spotted Sandpiper, one, Echo Lake ; two, Wallkill Valley.
7. *Oxyechus vociferus*, Kildeer Plover, two, Wallkill Valley.
8. *Bonasa umbellus*, Ruffed Grouse, eight young with adult, Greenwood Lake ; one, Wawayanda Lake ; two, Echo Lake.
9. *Colinus virginianus*, Bobwhite, one, Echo Lake.
10. *Zenaidura macroura carolinensis*, Mourning Dove, one, Little Pond Greenwood ; two, Echo Lake.
11. *Circus hudsonius*, Marsh Hawk, one, Wallkill Valley.
12. *Accipiter velox*, Sharp-shinned Hawk, one, Beaver Lake.
13. *Accipiter cooperi*, Cooper's Hawk, one, Beaver Lake ; one, Wallkill Valley.
14. *Buteo borealis*, Red-tailed Hawk, two, Beaver Lake ; two, Wallkill Valley.
15. *Buteo platypterus*, Broad-winged Hawk, one, Greenwood Lake ; one, Wawayanda Lake.

16. *Halizetus leucocephalus*, Bald Eagle, two, Greenwood Lake.
17. *Falco sparverius*, Sparrow Hawk, one at Hamburg, Sussex County.
18. *Pandion h. carolinensis*, Osprey, one, Greenwood Lake.
19. *Coccyzus americanus*, Yellow-billed Cuckoo, one, Greenwood Lake.
20. *Coccyzus erythrophthalmus*, Black-billed Cuckoo, common; two nests, three or four eggs, fresh, at Greenwood Lake; several at Echo, Beaver and Wallkill.
21. *Ceryle alcyon*, Kingfisher, one, Echo Lake; two, Beaver Lake; two, Wallkill Valley.
22. *Dryobates villosus*, Hairy Woodpecker, nest Greenwood Lake, feeding young; two, Wallkill Valley; one, Wawayanda Lake.
23. *Dryobates pubescens medianus*, Downy Woodpecker, occasional; five, Wallkill Valley.
24. *Colaptes auratus luteus*, Flicker, common generally.
25. *Melanerpes erythrocephalus*, Red-headed Woodpecker, a few near Deckertown in August trip.
26. *Antrostomus vociferus*, Whip-poor-will, common Greenwood Lake, one nest, two eggs, fresh.
27. *Chordeiles virginianus*, Night Hawk, common Greenwood Lake.
28. *Chaetura pelagica*, Chimney Swift, abundant generally.
29. *Archilochus colubris*, Humming Bird, one, Wawayanda Lake.
30. *Tyrannus tyrannus*, King Bird, abundant generally.
31. *Myiarchus crinitus*, Crested Flycatcher, common generally.
32. *Sayornis phoebe*, Phoebe, abundant generally; nest and five eggs well incubated.
33. *Myiochanes virens*, Wood Pewee, common generally.
34. *Empidonax traillii alnorum*, Alder Flycatcher, several Greenwood Lake, one at Wawayanda Lake; all in alder swamps.
35. *Empidonax minimus*, Least Flycatcher, abundant generally; four eggs well incubated.

36. *Cyanocitta cristata*, Blue Jay, abundant Greenwood Lake, common elsewhere.
37. *Corvus brachyrhynchos*, Crow, only a few at each place.
38. *Dolichonyx oryzivorus*, Bobolink, two pairs Greenwood Lake, two pairs near Wawayanda Lake; abundant in Wallkill Valley, breeding both in upland and drowned lands.
39. *Molothrus ater*, Cowbird, two at Greenwood Lake, several Wallkill Valley.
40. *Agelaius phoeniceus*, Red-winged Blackbird, common Greenwood, abundant elsewhere.
41. *Sturnella magna*, Meadow Lark, common Greenwood Lake, sparing elsewhere.
42. *Icterus spurius*, Orchard Oriole, several Greenwood Lake, several Wallkill Valley.
43. *Icterus galbula*, Baltimore Oriole, common or abundant everywhere; two nests.
Sturnus vulgaris, English Starling, three in flock Greenwood Lake, several near Deckertown.
44. *Quiscalus quiscula (aeneus?)*, Purple Grackle, fairly common.
45. *Loxia curvirostra minor*, Red Crossbill, seven in pines near Wawayanda Lake.
46. *Astragalinus tristis*, Goldfinch, abundant generally.
47. *Poocetes gramineus*, Vesper Sparrow, fairly common generally, abundant at Wallkill Valley.
48. *Ammodramus sav. australis*, Grasshopper Sparrow, several Wallkill Valley only.
49. *Passerherbulus henslowi*, Henslow's Bunting, several in Wallkill Valley in August, young fledged and old still singing.
50. *Spizella passerina*, Chipping Sparrow, abundant; four eggs, incubated, 5th.
51. *Spizella pusilla*, Field Sparrow, abundant; four eggs, incubated, 8th.
52. *Melospiza melodia*, Song Sparrow, abundant; four young, one week old, 7th.
53. *Melospiza georgiana*, Swamp Sparrow, abundant; few each place; abundant Wallkill Valley.
54. *Pipilo erythrophthalmus*, Towhee, a few Greenwood and Wawayanda, abundant at Echo and Beaver Lakes.

55. *Zamelodia ludoviciana*, Rose-breasted Grosbeak, few generally, very abundant at Wallkill Valley.
56. *Passerina cyanea*, Indigobird, fairly common generally.
57. *Piranga erythromelas*, Scarlet Tanager, common at Greenwood Lake, four eggs, fresh; abundant at Beaver Lake and Wallkill Valley.
58. *Progne subis*, Purple Martin, several in the Wallkill Valley.
59. *Petrochelidon lunifrons*, Cliff Swallow, abundant or common throughout.
60. *Hirundo erythrogaster*, Barn Swallow, abundant generally, nest with eggs.
61. *Iridoprocne bicolor*, Tree Swallow, a few at Echo Lake, Beaver Lake and Wallkill Valley.
62. *Stelgidopteryx serripennis*, Rough-winged Swallow, one at Echo Lake and one in Wallkill Valley.
63. *Bombicilla cedrorum*, Cedar Bird, common; several flocks at Greenwood Lake.
64. *Vireosylvia olivacea*, Red-eyed Vireo, abundant everywhere; two nests found.
65. *Vireosylvia gilva*, Warbling Vireo, abundant in Wallkill Valley only.
66. *Lanivireo flavifrons*, Yellow-throated Vireo, fairly common everywhere.
67. *Vireo griseus*, White-eyed Vireo, five in the Wallkill Valley.
68. *Mniotilta varia*, Black-and-white Warbler, abundant at Greenwood Lake, feeding young; common at Wawayanda Lake and elsewhere.
69. *Helmitheros vermivorus*, Worm-eating Warbler, several pair at Greenwood and Echo Lakes; four incubated eggs at Greenwood on the eighth.
70. *Vermivora pinus*, Blue-winged Warbler, four pair at Greenwood, three at Echo Lake.
71. *Vermivora chrysoptera*, Golden-winged Warbler, several at each locality; five at Wallkill Valley.
72. *Compsothlypis americana usneae*, Parula Warbler, a few at Greenwood, Wawayanda, Echo and Beaver Lakes.

73. *Dendroica aestiva*, Yellow Warbler, common generally ; two young and two eggs at Greenwood Lake ; abundant at Wallkill Valley.

74. *Dendroica caerulescens*, Black-throated Blue Warbler, one male near small lake west of Wawayanda Lake.

75. *Dendroica pensylvanica*, Chestnut-sided Warbler, fairly common everywhere ; three fresh eggs at Greenwood ; Only one or two individual birds seen in Wallkill Valley.

76. *Dendroica virens*, Black-throated Green Warbler, two or three each at Greenwood, Wawayanda and Echo Lakes.

One bird heard singing in tree-top at Greenwood may have been a Blackburnian Warbler, but was not positively identified.

77. *Seiurus aurocapillus*, Ovenbird, abundant everywhere ; five nests with eggs and young.

78. *Seiurus motacilla*, Louisiana Water Thrush, common at Greenwood Lake ; two nests with eggs ; one seen at Wawayanda Lake, several at Echo Lake, Beaver Lake and in the Wallkill Valley.

79. *Geothlypis trichas*, Maryland Yellowthroat, abundant generally ; nest with fresh eggs.

80. *Icteria virens*, Yellow-breasted Chat, two at Greenwood Lake, one at Wawayanda Lake, several at Beaver Lake and Walkill Valley.

81. *Wilsonia citrina*, Hooded Warbler, abundant at Greenwood Lake, where a nest with fresh eggs was found, common at Wawayanda Lake and one at Echo Lake.

82. *Wilsonia canadensis*, Canadian Warbler, seen at Greenwood, Wawayanda and Beaver Lakes, several at each locality.

83. *Setophaga ruticilla*, Redstart, common in mountains everywhere ; fresh eggs at Greenwood Lake, a few in Wallkill Valley.

84. *Dumetella carolinensis*, Catbird, abundant, young birds about three days old in nest.

85. *Toxostoma rufum*, Brown Thrasher, occasional at all stations, abundant at Echo Lake, young six days old.

86. *Troglodytes aedon*, House Wren, not very common, except at Wallkill Valley where it was abundant.

87. *Cistothorus stellaris*, Short-billed Marsh Wren, abundant, breeding in the Wallkill Valley swamps ; large young found June 10, and one set of eggs on later visit in August.

88. *Telmatodytes palustris*, Long-billed Marsh Wren, a few in the Wallkill Valley, Cattail Swamp in August.

89. *Sitta carolinensis*, White-breasted Nuthatch, three in Wallkill Valley.

90. *Penthestes atricapillus*, Black-capped Chickadee, a few at each locality.

91. *Hylocichla mustelina*, Wood Thrush, abundant generally, several nests.

92. *Hylocichla fuscescens*, Veery, several at each locality.

93. *Planesticus migratorius*, Robin, abundant everywhere.

94. *Sialia sialis*, Bluebird, fairly common at Greenwood Lake, few elsewhere.