

scratched up all around, to a level with the rim, so that one could hardly see where the nest proper left off. Inside the nest was about two and one half inches wide by one and one half inches in depth; outside it was about five inches wide by three inches in depth. The ground on which the nest was placed was so damp that the bottom part of it was badly decayed.

[The eggs of *Cardellina rubrifrons*, kindly presented by Mr. Price to the National Museum collection at Washington, D. C., are new to science, I believe. They are ovate in shape. Their ground color is a delicate creamy white, and they are spotted with small blotches of cinnamon rufous and a few dots of heliotrope purple and pale lavender. These form a wreath around the larger end. They resemble the eggs of *Helminthophila luciae* and *H. virginiae* to a certain extent. They measure .66 × .50, .67 × .50, .66 × .50 and .66 × .50 inch.—CHAS. E. BENDIRE.]

NOTES ON THE BIRDS OF WINCHENDON, WOR- CESTER COUNTY, MASSACHUSETTS.

BY WILLIAM BREWSTER.

IN 1887 I spent three days (June 23 to 26), and in 1888 seven days (June 11 to 18), investigating the bird fauna of the region about Winchendon, a town near the northern border of Worcester County, Massachusetts, about sixteen miles south of Mt. Monadnock.

On the first trip I was accompanied by Mr. H. A. Purdie, on the second by Messrs. H. M. Spelman and S. W. Denton; while during both visits Mr. C. E. Bailey, a young local collector, devoted his entire time to helping me, his intimate knowledge of the woods and swamps and the particular haunts of some of the rarer birds proving of very great value. Upon looking over the notes made during these trips I have decided to omit in the present paper any detailed mention of birds whose occurrence possesses no particular significance or interest, but a nominal list is given of all the species observed.

Most of the notes relate, of course, to the presence of the summer birds only, but a few captures of rare winter visitors are given on Mr. Bailey's authority.

The region about Winchendon — that is, within five or six miles on every side — varies in elevation from about 850 to 1300 feet.* There are no mountains nearer than Monadnock, but the surface of the country is everywhere broken and hilly, very wild and picturesque, and mainly wooded, the farms being comparatively few and far between, and the forest areas often miles in extent. On the hills and throughout the drier portions of the lowlands, the forests are composed chiefly of white pine, hemlock, and various deciduous trees. The swamps, nearly without exception, are covered with a dense, almost impenetrable and rather stunted growth of black spruces, balsams, and larches, with a very few white spruces. The black spruces and balsams also grow abundantly about the edges of the hill pastures, along the roadsides, and wherever there is young second growth. On sandy levels in the valleys one finds a few red and pitch pines. The hardwood timber on the uplands is composed chiefly of beech, red and sugar maple, yellow and paper birch, with a sprinkling of red oaks and basswoods, a very few chestnuts, and more or less scattering, old-growth spruces. The trees in these upland woods are often of large size, and there are a few tracts which have never been touched by the axe. The underwood is chiefly of hobble bush (*Viburnum lantanooides*) and striped and mountain maples, the last two being especially abundant along the borders of streams and openings. In places yew is also found, but I saw no extensive or very vigorous beds of it. About the swamp edges the beautiful pink azalia (*A. nudiflora*) is everywhere common. Ferns of various species flourish in great luxuriance wherever the soil is damp enough for them, and a deep, soggy carpet of sphagnum covers the ground in the swamps. On the hillsides, especially under white pines, the exquisite little *Linnæa borealis* is frequently met with, and *Clintonia borealis* abounds everywhere.

In more general terms the flora may be characterized as resembling that of the valleys and foot hills about the confines of the White Mountains. It lacks, however, as far as I could learn, one northern tree which is common and very generally distributed throughout northern New England, viz., the arbor vitæ.

*This generalization is based on the following altitudes furnished me by Mr. H. W. Henshaw from the Coast Survey records at Washington; "Winchendon Centre, 1225 ft.; depot, 978 ft.; Bullardville, 845 ft.

Of mammals the white hare and Canada porcupine are abundant. Deer and bears have been exterminated (the latter less than fifty years ago), but a 'wild cat' is occasionally seen. Red squirrels are numerous, gray squirrels less so, but still not uncommon. Foxes, raccoons, woodchucks, skunks and striped squirrels abound.

The bird fauna, like the flora, is curiously mixed in character. Thus, Brown Thrashers, Catbirds, Towhees, Meadowlarks, and Baltimore Orioles occur with Winter Wrens, Golden-crested Kinglets, Yellow-rumped and Black-and-yellow Warblers, Juncos, and White-throated Sparrows. Unlike portions of Berkshire County and the Catskills where these or equally typical representatives of the Canadian and Alleghanian Faunas are found near together, but respectively confined to different altitudinal belts or areas and hence not to any considerable extent in actual company, the country about Winchendon seems to form a neutral ground upon which the birds above-named intermingle on the same levels, and often in the same thickets. If altitude must be assumed to play any part in their distribution its influence is directly contrary to the usual one, for most of the northern birds, whether computed by species or individuals, breed in the valleys, while the Alleghanian forms are certainly not least numerous represented on the hill tops. This seeming paradox is easily explained, however, when we reflect that the woods in the low-lying swamps are closely similar to those of northern New England, whereas the growth on the hills and ridges is essentially the same as that of the lower portions of Massachusetts. This is probably due to the fact that the extremes of elevation within the region are not sufficiently great to overcome local influences, such as differences in soil, relative amounts of moisture, etc. Be this as it may the birds evidently settle wherever the woods, swamps, or fields are most to their liking, without regard to elevation. Such a case may well arouse suspicion as to the extent to which the distribution of birds is directly governed by altitude, or its equivalent, latitude. Is not the presence or absence of certain kinds of country, or of particular trees or plants which furnish congenial food, shelter, or nesting sites more likely to be the determining factor, at least in very many cases? It would be interesting to plant a northern forest in southern New England and await developments. If

the spruces, balsams, etc., could be made to live and flourish, the outcome of the experiment would at least go far towards settling the question above proposed.

List of species ascertained to pass the breeding season near Winchendon.

(Those marked with an * are not common.)

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| 1. <i>Urinator imber.</i> | 42. <i>Junco hyemalis.*</i> |
| 2. <i>Anas obscura.</i> | 43. <i>Melospiza fasciata.</i> |
| 3. <i>Aix sponsa.*</i> | 44. <i>Melospiza georgiana.</i> |
| 4. <i>Philohela minor.</i> | 45. <i>Pipilo erythrophthalmus.</i> |
| 5. <i>Actitis macularia.</i> | 46. <i>Habia ludoviciana.</i> |
| 6. <i>Bartramia longicauda.</i> | 47. <i>Passerina cyanea.</i> |
| 7. <i>Bonasa umbellus.</i> | 48. <i>Piranga erythromelas.</i> |
| 8. <i>Ectopistes migratorius.*</i> | 49. <i>Progne subis.</i> |
| 9. <i>Zenaidura macroura.*</i> | 50. <i>Petrochelidon lunifrons.</i> |
| 10. <i>Buteo borealis.</i> | 51. <i>Chelidon erythrogaster.</i> |
| 11. <i>Syrnium nebulosum.</i> | 52. <i>Tachycineta bicolor.</i> |
| 12. <i>Nyctala acadica.</i> | 53. <i>Clivicola riparia.</i> |
| 13. <i>Megascops asio.*</i> | 54. <i>Ampelis cedrorum.</i> |
| 14. <i>Bubo virginianus.</i> | 55. <i>Vireo olivaceus.</i> |
| 15. <i>Coccyzus erythrophthalmus.</i> | 56. " <i>gilvus.</i> |
| 16. <i>Dryobates villosus.</i> | 57. " <i>solitarius.</i> |
| 17. <i>Ceophlœus pileatus.*</i> | 58. <i>Mniotilta varia.</i> |
| 18. <i>Colaptes auratus.</i> | 59. <i>Helminthophila ruficapilla.</i> |
| 19. <i>Antrostomus vociferus.</i> | 60. <i>Compsothlypis americana.</i> |
| 20. <i>Chordeiles virginianus.</i> | 61. <i>Dendroica æstiva.</i> |
| 21. <i>Chætura pelagica.</i> | 62. " <i>cærulescens.*</i> |
| 22. <i>Tyrannus tyrannus.</i> | 63. " <i>coronata.</i> |
| 23. <i>Myiarchus crinitus.*</i> | 64. " <i>maculosa.</i> |
| 24. <i>Contopus borealis.*</i> | 65. " <i>pennsylvanica.</i> |
| 25. " <i>virens.</i> | 66. " <i>blackburniæ.</i> |
| 26. <i>Empidonax minimus.</i> | 67. " <i>virens.</i> |
| 27. <i>Cyanocitta cristata.</i> | 68. <i>Seiurus aurocapillus.</i> |
| 28. <i>Corvus americanus.</i> | 69. <i>Geothlypis trichas.</i> |
| 29. <i>Dolichonyx oryzivorus.</i> | 70. <i>Icteria virens.*</i> |
| 30. <i>Agelaius phœniceus.</i> | 71. <i>Sylvania canadensis.</i> |
| 31. <i>Sturnella magna.*</i> | 72. <i>Setophaga ruticilla.</i> |
| 32. <i>Icterus galbula.</i> | 73. <i>Galeoscoptes carolinensis.</i> |
| 33. <i>Quiscalus quiscula æneus.</i> | 74. <i>Harporhynchus rufus.</i> |
| 34. <i>Carpodacus purpureus.</i> | 75. <i>Troglodytes hiemalis.*</i> |
| 35. <i>Loxia curvirostra minor.</i> | 76. <i>Sitta canadensis.*</i> |
| 36. <i>Spinus tristis.</i> | 77. <i>Parus atricapillus.</i> |
| 37. <i>Poocætes gramineus.</i> | 78. <i>Regulus satrapa.</i> |
| 38. <i>Ammodramus henslowi.*</i> | 79. <i>Turdus fuscescens.</i> |
| 39. <i>Zonotrichia albicollis.*</i> | 80. " <i>aonalaschka pallasii.</i> |
| 40. <i>Spizella socialis.</i> | 81. <i>Merula migratoria.</i> |
| 41. " <i>pusilla.</i> | 82. <i>Sialia sialis.</i> |

Urinator imber.—One or more pairs of Loons breed regularly in every pond of sufficient size near Winchendon. Mr. Albert Henry, of Gardner, took a set of two eggs at Blue's Reservoir in 1887. At Wellington's Reservoir, a large sheet of water about five miles north of Winchendon, a farmer living near the shore assured us that he saw several of the birds daily through the entire summer. He thought that there were at least three pairs in the pond in 1888.

Anas obscura.—Mr. Bailey sees a few Black Ducks every summer but they are much less numerous at that season than in spring and autumn. Early in June, 1888, he found on the bank of a brook, the shells of several eggs that had probably hatched a few days before.

Nyctala acadica.—A common resident, doubtless breeding numerous, although Mr. Bailey has not as yet succeeded in finding nests.

Surnia ulula caparoch.—In the winter of 1886-87 Mr. Bailey shot three specimens, in that of 1887-1888 one. He thinks they occur regularly every winter.

Dryobates villosus.—During my first visit to Winchendon I did not find this species, but in 1888 we met with several. A pair seen June 16, were feeding young which had evidently just left the nest.

Picoides arcticus.—Mr. Bailey killed four specimens in the winter of 1886-1887, and one during the following winter. He is very sure they were visitors from the north, and that none breed near Winchendon.

Ceophlœus pileatus.—Resident, but not common. Mr. Bailey sees only two or three pairs each season but thinks that there are more in Winchendon than in any of the neighboring towns. About the middle of June, 1887, one of his friends met with a brood of young in the woods. I did not find the bird during either visit, but its unmistakable mortise-shaped 'peck holes' were frequently observed.

Contopus borealis.—June 26, 1887, we found two pairs of Olive-sided Flycatchers in an extensive sphagnum swamp, and after a short search discovered one of their nests near the top of a rather tall black spruce. The female was sitting on three nearly fresh eggs. In 1888 I did not revisit this swamp, but Mr. Bailey passed it a few days before my arrival and heard the Flycatchers calling. We did not find the species elsewhere.

Loxia curvirostra minor.—A single pair seen in spruce woods June 13, 1888, and the male shot. His testes were of large, but not maximum size. Mr. Bailey tells me that this Crossbill is numerous every winter, but he has never seen it in summer before. Its occurrence at the latter season does not prove, of course, that it breeds about Winchendon, although it would be by no means surprising if a few pairs were found to nest there.

Ammodramus henslowi.—Several pairs breeding in a meadow about three miles south of Winchendon.

Zonotrichia albicollis.—In 1887 I met with two males, and in 1888 one, all in spruce swamps. They were in full song and evidently had mates and nests, for they showed the utmost concern when their retreats were invaded.

Junco hyemalis.—Apparently quite as uncommon as the White-throated Sparrow, for we met with only three pairs, one in 1887, two in 1888. All were on high ground in pine or hemlock woods. The males were singing, and the actions of at least one of the females indicated that there were eggs or young somewhere near.

Helminthophila chrysoptera.—A single male was obtained by Mr. Bailey in May, 1888.

Dendroica cærulescens.—The only Black-throated Blue Warbler met with during either year was a male shot June 17, 1888. This bird was singing steadily in a dense growth of young hemlocks on a hillside. As there were no beds of yew (the favorite nesting place of this species) in the neighborhood, and as we had passed several previous mornings in the same woods without hearing the bird, it is probable that he had strayed some distance away from his mate and nest, or that he was a bachelor wandering aimlessly about the country.

Dendroica coronata.—Rather common but nowhere very numerous. Found chiefly in groves of white pines on high ground but also, to some extent, in the spruce swamps. Although we failed to find any nests there can be no doubt whatever that the birds seen were breeding.

Dendroica maculosa.—This Warbler breeds in about the same numbers as the Yellow-rump. Both species were nearly sure to be seen daily, but it was unusual to find more than one pair of either in any single tract of woods, however large. The favorite haunts of the Black-and-yellow, here, as in northern New England, are swamp edges, woodpaths, or borders of openings where the undergrowth is more or less intermixed with young spruces and balsams. In such a place—within about ten yards of a woodpath—we found a nest June 15, 1888, containing four nearly fresh eggs. This nest was typical in position, being placed near the top of a small spruce at a height of about five feet. In construction it differed from Maine nests of this species only in respect to the lining, which was largely of horse hair with, however, an admixture of black rootlets.

Dendroica Blackburniæ.—On both high and low ground, wherever there were spruces in any numbers, whether by themselves or mixed with other trees, and also to some extent where the growth was entirely of hemlocks, the Blackburnian Warbler was one of the most abundant and characteristic summer birds, in places even outnumbering the Black-throated Green Warbler, although it shunned strictly the extensive tracts of white pines which *D. virens* seemed to find quite as congenial as any of the other evergreens. A set of four fresh eggs was taken June 26, 1887. The nest, which was found by watching the female, was built at a height of about thirty feet above the ground, on the horizontal branch of a black spruce, some six feet out from the main stem. Its bottom rested securely near the base of a short, stout twig. Above and on every side masses of dark spruce foliage, rendered still denser by a draping of *Usnea* (which covered the entire tree profusely), hid the nest so perfectly that not a vestige of it could be seen from any direction. This nest is composed outwardly of fine twigs, among which some of the surrounding *Usnea* is entangled and

interwoven. The lining is of horse hair, fine, dry grasses, and a few of the black rootlets used by *D. maculosa*. The whole structure is light and airy in appearance, and resembles rather closely the nest of the Chipping Sparrow. The eggs measure respectively: .68 X .49; .66 X .50; .69 X .49; .68 X .51 inch. They are marked with pale lavender, vandyke brown, mars brown, and black. Over most of the shell the markings are fine and sparsely distributed, but about the larger end they become broad and more or less confluent, tending to form a wreath pattern. Some of the black markings are linear, resembling pen scratches. The ground color of these eggs before blowing would have passed for dull white, but with the removal of their contents a delicate, yet faint, greenish tinge appeared and has since persisted. This greenish tinge was also a characteristic feature of eight eggs (representing two sets) taken by Mr. Bailey at Winchendon before my arrival in 1887. Lest the identification of the above-described set be questioned, I will add that the female was seen to enter the nest, and that both she and her mate were shot and preserved.

Icteria virens.—Mr. Bailey shot a male of this species May 30, 1888.

Sylvania canadensis.—Throughout the spruce swamps the Canadian Warbler was everywhere abundant. A brood of young barely able to fly were met with June 25, 1887, and the next day Mr. Purdie took a set of eggs rather far advanced in incubation. The nest was in the face of a low, sphagnum-covered mound about eighteen inches above its base. In the soft mould behind the outer covering of sphagnum the birds had excavated a cavity about the size of one's fist. In the bottom of this cavity was the nest, a loosely formed, but nevertheless neat structure, composed outwardly of dry leaves, and lined with pine needles, black rootlets, and a little horse hair. The bird entered by a small round hole, the bottom of which was about on a level with the top of the nest. All the nests (a dozen or more) of this species which I have examined were built like the one just described, although the height above the ground has varied, one which I took at Lake Umbagog in 1879, being higher than my head in a patch of moss that covered the face of a perpendicular cliff. I have yet to see a nest placed on the ground and open at the top as most of the book descriptions indicate.

Troglodytes hiemalis.—In the swamp where the Olive-sided Flycatchers breed, we heard two Winter Wrens singing June 26, 1887. While trying to get a sight at one of them I flushed and shot a young bird which could not have been more than a day or two from the nest, as it was unable to fly more than a few yards at a time. There were many fallen trees in the vicinity, and their upturned roots, laden with earth and overgrown with moss, afforded numberless nesting sites. As already stated, I did not revisit this swamp in 1888, but Mr. Bailey tells me that he heard the Wrens singing there a few days before our arrival.

Sitta canadensis.—Besides the Winter Wren and Olive-sided Flycatcher the spruce swamp just mentioned furnished another species not found elsewhere, viz., the Red-bellied Nuthatch. We saw only a single pair which, attracted by the outcry made by the Canadian Warblers as we were

taking their nest, came into the trees overhead, uttering their peculiar nasal whining. Doubtless they were breeding somewhere in the neighborhood, although I have no positive proof of this.

Regulus satrapa.—My experience with this species at Winchendon is given fully in another article in this number of 'The Auk.'

Turdus aonalaschkæ pallasii.—An abundant bird throughout the entire region, haunting by preference dry, rather open, white pine woods.

LIST OF ADDITIONS TO THE NORTH AMERICAN
AVIFAUNA AND OF ELIMINATIONS AND
CHANGES IN NOMENCLATURE PRO-
POSED SINCE THE PUBLICA-
TION OF THE A. O. U.
CHECK-LIST.

BY FRANK M. CHAPMAN.

Since the publication of the 'Check-List' in March, 1886, the additions and corrections to our avifauna have been so numerous it has been considered advisable to collate them, and the following compilation is presented with a hope that it may be of some service to the many workers in North American Ornithology.

It may be well to add that the compiler has made it an object to include *all* the additions and changes which have been made without reference to their tenability.

I. ADDITIONS.

Species and subspecies which have been described as new, 'revived,' or recorded as North American.

1. *Larus barrobianus* *Ridgw.* POINT BARROW GULL.
RIDGWAY, *Auk*, III, July, 1886, p. 330.
HAB. "Bering's Sea and contiguous waters, northeastward to Point Barrow; southwestward to Japan (in winter)."
2. *Larus minutus* *Pall.* LITTLE GULL.—Recorded from Long Island, New York, by Dutcher in *Auk*, V, April, 1888, p. 171.