

1876, May 20.—First birds shot, best shooting on the 26th.

1877, Sept. 28.—Shot one on Nantucket Island, Mass.

1884, Aug. 25.—Shot two on Nantucket Island.

1891, about Aug. 20.—Twenty shot on Tuckernuck Island, Mass.

1891, Sept. 7.—Quite a flight of young birds passed Essex, Mass.; wind northeast with rain, storming hard.

1892, May 11.—Tuckernuck Island, first birds seen (three). June 1, seven seen (adults). Aug. 2, Muskeget Island, Mass., I saw eight Knots, and shot one which had some red feathers on the breast, and was very fat. Aug. 3, Muskeget Island, saw one, with an apparently full red breast, but failed to secure it.

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## SUMMER BIRDS OF INDIANA AND CLEARFIELD COUNTIES, PENNSYLVANIA.

BY W. E. CLYDE TODD.

WHEN we come to examine and compare the summer birds of Beaver, in Beaver County, Pennsylvania, with those found at that season in the Buffalo Creek region of Butler and Armstrong Counties, about forty miles directly to the eastward, a striking difference at once becomes apparent. This difference consists in the entire absence or rarity in the latter locality of a number of more or less typical Carolinian species which are characteristic birds at Beaver, and in the infusion instead of certain Alleghanian and Canadian forms. As might be expected, there is a corresponding difference in the flora of the respective sections, which is especially marked in the character of the forest, coniferous trees of three species,—white pine (*Pinus strobus*), pitch pine (*Pinus rigida*), and hemlock (*Tsuga canadensis*),—which are rather local and not common in Beaver County, predominating in the other locality. But it is to be observed that this preponderance of conifers exists only in the vicinity of streams, the higher upland forests differing little, if at all, from those of like situation in Beaver County, though here and there a solitary conifer may be found.

In order to investigate the country still farther to the eastward, in Indiana County, I spent four days, June 22 to 25, 1892, in this

region, my stopping-place being a farmhouse two miles east of the village of Two Lick, on Two Lick Creek, a few miles south of the town of Indiana and near Chestnut Ridge. This ridge is the most western range of the Appalachian chain in Pennsylvania, entering the State from the south about the middle of the southern boundary of Fayette County, and terminating a short distance east of the place of my observations. At this point it becomes nothing more than a series of broken ranges of high hills, which to the northward finally disappear into the general level. The elevation for this part according to the contour map of the U. S. Geological Survey is 1500 feet, but there is good reason for believing that to the southward the Ridge attains a height of 2000 feet, since the town of Ligonier, situated east of the range, in Westmoreland County, is known to be 1748 feet above tide.

I found this locality far poorer in conifers than the Buffalo Creek region which I had just left, and I was told that they predominated only in the northern and eastern parts of the County, Pine Flats, fourteen miles east from Indiana, being said to be the western limit of their abundance here. No pines at all were discovered, and the hemlock was confined to the bottom lands of Two Lick and Yellow Creeks, and even there it occurred only at intervals. However, where it was found at all it was very often to the almost complete exclusion of other forest trees. Progress through such gloomy tracts of woods would have been practically out of the question had it not been for an occasional cattle-path or a small stream flowing through the midst, so dense were the thickets of laurel (*Kalmia latifolia*) and rhododendron (*Rhododendron maximum*) beneath. This growth, as well as that of the hemlocks, often extended a short distance up the adjoining hillsides, especially if they were steep and had a northerly exposure, though the laurel in places composed thickets by itself, while the rhododendron was not found outside the shade of the hemlocks.

These tracts of hemlock forest in the creek bottoms, with their undergrowth of laurel and rhododendron, interspersed with small pools of stagnant water, were far more prolific in bird life than the hills and uplands above, although of so limited extent in comparison. Black-throated Blue, Black-and-yellow, Blackburnian, and Blue Yellow-backed, Warblers were the characteristic birds of such cool and shady recesses, within which they

were abundant, but outside of which they were not found at all. Several other species were more or less common also in such situations.

The high hills in which Chestnut Ridge terminates are clothed from base to summit with a deciduous forest, of which oaks of several species and chestnuts are the most prominent trees. The latter seemed to be more abundant near and on the summit than lower down. Black-throated Green Warblers were numerous throughout this woodland, where about the only other birds found to any extent were the Red-eyed Vireo, Golden-crowned Thrush, Black-and-white Warbler, Wood Thrush, and White-breasted Nuthatch, but none of these were nearly so common as the species which were confined to the hemlocks. At some points, where the original forest had been cut and second-growth and tracts of bushes and scrub had taken its place, the Chestnut-sided Warbler, Yellow-breasted Chat, Brown Thrasher, and Catbird were found, as well as a single individual of the Cerulean Warbler, which species was otherwise observed only in the open woods of the uplands outside of Chestnut Ridge. The cultivated districts were found almost altogether in these uplands, the birds of whose orchards, fields, and woods did not differ materially from those found in like situations in Beaver County.

In considering the faunal relations of the locality, we find that three species occur which are usually considered to belong to the Canadian Fauna, namely, *Dendroica caerulescens*, *Dendroica maculosa*, and *Dendroica blackburnia*. It is a noteworthy fact that all these birds, which are abundant here in suitable situations, are rather uncommon in the Buffalo Creek region, while on the other hand two of the common relatively northern species of this latter locality—*Sylvania canadensis* and *Turdus fuscescens*—are here apparently altogether wanting.

Five species were found whose breeding range to the southward is limited to the Alleghanian Fauna: *Empidonax minimus*, *Helminthophila chrysoptera*, *Dendroica pensylvanica*, *Dendroica virens*, and *Parus atricapillus*.

Ten species were observed whose breeding range to the northward is likewise limited to the Alleghanian Fauna: *Colinus virginianus*, *Antrostomus vociferus*, *Sturnella magna*, *Icterus galbula*, *Ammodramus savannarum passerinus*, *Pipilo erythrophthalmus*, *Piranga erythromelas*, *Galeoscoptes carolinensis*, *Harporhynchus rufus*, and *Turdus mustelinus*.

The six following more or less typical Carolinian species were found: *Empidonax acadicus*, *Cardinalis cardinalis*, *Dendroica caerulea*, *Seiurus motacilla*, *Icteria virens*, and *Parus bicolor*.

It is to be remarked that the three species constituting the Canadian element are not the most typical of that fauna,<sup>1</sup> and furthermore that they are wholly confined to the deep hemlock woodland of the creek bottoms, the coolness of whose forest shade seems to become the equivalent of a higher altitude, as another writer has recently remarked.

It is, moreover, to be observed that only a few typical Carolinian forms occur, while the Alleghanian element is the most prominent as to number of species. On the whole, consideration of the above facts seems to bear out the conclusion that this region belongs to the Alleghanian Fauna, with, on the one hand, a slight tinge of lower Canadian forms where local conditions are favorable for their existence, and on the other a very considerable Carolinian element. Compared with the Buffalo Creek region it seems to be somewhat more southerly (in a faunal sense), since the relatively northern birds are more local in their distribution and are fewer, in number of species, though represented by a greater number of individuals.

But one paper containing any information on the birds of Chestnut Ridge has so far been published (that by Mr. C. H. Townsend in the Proceedings of the Philadelphia Academy of Natural Sciences for 1883, pages 59 to 68), and this information is so meagre as to be practically valueless for comparison. Of the birds of the country between Chestnut Ridge and the main Alleghany Mountains, including Laurel Hill, we know nothing as yet.

Sixty-five species were observed during my stay, of which the following is a list.

*Actitis macularia*.—Common at certain favorable points along Two Lick Creek, but observed also about marshy spots in the upland.

*Colinus virginianus*.—Quite abundant in the upland meadows and grain fields.

*Bonasa umbellus*.—Met with but once, in the laurel and rhododendron thicket of Yellow Creek bottom.

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<sup>1</sup> Cf. Allen, in Stone, Proc. Phila. Acad. Nat. Sci., 1891, 433, foot-note.

*Meleagris gallopavo*. — On the last day of my stay a Wild Turkey hen, accompanied by three young less than a week old, appeared near the house where I was staying. It is quite possible that there were more young, but these were all that could be found. They were captured and taken into the barn, with the object of decoying the parent inside and capturing her also. She refused to enter, however, but presently flew to the roof, and afterwards lingered about for some time, and doubtless was in the vicinity when I arrived upon the scene, but I was prevented from making a careful search by lack of time. I was informed that Wild Turkeys were tolerably common in this county, and did considerable damage in the grain fields; on several occasions nests with eggs are said to have been found.

*Zenaidura macroura*. — Common everywhere, except in the deep woods.

*Accipiter velox*. — One observed near the summit of Chestnut Ridge.

*Buteo borealis*. — A pair seen circling over the summit of Chestnut Ridge.

*Coccyzus americanus*. — Observed but twice.

*Ceryle alcyon*. — Found along Yellow Creek on one occasion. From the lack of banks suitable for nesting purposes I should judge that it was not numerous.

*Dryobates pubescens*. — Found in the forest.

*Melanerpes erythrocephalus*. — One individual noticed in the upland, between Two Lick and Homer City.

*Antrostomus vociferus*. — Several were heard.

*Chætura pelagica*. — Seen but once.

*Trochilus colubris*. — An individual observed along Two Lick Creek, at the village.

*Tyrannus tyrannus*. — Common. Found in orchards and at some points along the streams.

*Myiarchus crinitus*. — Not common.

*Sayornis phœbe*. — Common.

*Contopus virens*. — Common in the deciduous forest.

*Empidonax acadicus*. — This species was fairly abundant throughout the forests of the creek bottoms and was often found higher up along the courses of smaller streams.

*Empidonax minimus*. — A single pair was observed in the trees surrounding the house where I was staying.

*Cyanocitta cristata*. — A few observed.

*Corvus americanus*. — Abundant.

*Molothrus ater*. — A small party was noticed in an upland pasture between Two Lick and Homer City.

*Agelaius phœniceus*. — Found commonly in and about the upland meadows and streams.

*Sturnella magna*. — Not uncommon in the upland.

*Icterus galbula*. — Two or three were found in orchards about houses.

*Quiscalus quiscula æneus*. — Found in the same situations as the last species, but more common.

*Spinus tristis*.—Numerous everywhere, except in the forest.

*Pooecætes gramineus*.—Common in the pastures and along the roadsides.

*Ammodramus savannarum passerinus*.—One pair was met with, frequenting a pasture field across the road from the house.

*Spizella socialis*.—Common and familiar as usual.

*Spizella pusilla*.—Numerous in waste pastures and in the bushy growth along fences.

*Melospiza fasciata*.—Abundant; found in its usual haunts.

*Pipilo erythrophthalmus*.—Common in briery thickets and on the edges of the woods.

*Cardinalis cardinalis*.—Several pairs were found, all in second-growth bushy thickets, both in the creek bottoms and on the hillsides.

*Habia ludoviciana*.—The Rose-breasted Grosbeak is one of the most abundant birds of this region. It does not affect the oak woods of Chestnut Ridge, nor yet the denser parts of the hemlock forest, but prefers the rich woods that border this last, as well as the upland woods near streams, and the tracts of second-growth interspersed.

*Passerina cyanea*.—This bird was found commonly in its usual haunts of bushy, briery thickets along the edges of the woods.

*Piranga erythromelas*.—Another very abundant species, especially partial to the hemlocks.

*Petrochelidon lunifrons*.—Observed about farm buildings, but not so numerous as the next species.

*Chelidon erythrogaster*.—Abundant about farm buildings.

*Vireo olivaceus*.—Very abundant throughout the woodland, in the bottoms and on the hilltops.

*Vireo gilvus*.—One pair was noticed in an orchard surrounding a farmhouse.

*Mniotilta varia*.—This species was one of the very few that were uniformly common in the hemlocks, in the second-growth, and in the oak forest of Chestnut Ridge.

*Helminthophila chrysoptera*.—But one observed,—on the edge of a wood on the bank of Two Lick Creek.

*Compsothlypis americana*.—Very common in the hemlocks, where its humming note could be heard continually. It usually kept high up in the very tops of the trees.

*Dendroica æstiva*.—Found mostly in the orchards about farmhouses; but two nests, one containing young, were discovered in a growth of willows fringing Two Lick Creek just behind the village.

*Dendroica cærulescens*.—This Warbler was confined to the hemlock forest of the creek bottoms, where it was abundant and in full song, haunting the dense laurel and rhododendron thicket beneath, though sometimes mounting to the trees.

*Dendroica maculosa*.—Equally abundant with the last species, and like it confined to the hemlocks and undergrowth below, where its sprightly song was constantly heard.

*Dendroica cærulea*.—Much to my surprise I found the Cerulean Warbler quite common, and musical, in the dry, open, oak woods of the uplands, though the only specimen secured was taken in a tract of dense second-growth on a creek hillside.

*Dendroica pensylvanica*.—Only two individuals noted, both males in full song, observed in a scrubby patch of briars, bushes and young trees, fringing a forest, on a creek hillside. I have reason to believe that this species was more common than it appeared to be.

*Dendroica blackburniæ*.—Another of the relatively northern species found exclusively in the conifers of the creek bottoms, where its flaming breast flashed in and out of the hemlocks. Not quite so numerous, however, as *D. cærulescens* and *D. maculosa*.

*Dendroica virens*.—This bird would be expected to occur most commonly in the hemlock forest, and though it actually was found on the edges of this to some extent, I was not a little surprised to discover that it was more numerous throughout the high oak and chestnut woods that cover Chestnut Ridge from base to summit, always keeping high in the treetops.

*Seiurus aurocapillus*.—A very common species, found throughout all kinds of woodland.

*Seiurus motacilla*.—A single pair recorded as frequenting a small stream flowing through the laurel and rhododendron growth in the hemlock forest of Yellow Creek bottom.

*Geothlypis trichas*.—Quite common, at intervals, in the waste ground along the banks of Two Lick Creek.

*Icteria virens*.—A few pairs of this distinctly southern species were noticed in the thickets to which it is always so partial.

*Galeoscoptes carolinensis*.—Common in briery thickets.

*Harpophynchus rufus*.—One pair accompanied by their young were seen in a thicket.

*Sitta carolinensis*.—Rather common throughout the woodland.

*Parus bicolor*.—A pair observed on one occasion in a yard around a dwelling.

*Parus atricapillus*.—Two noticed with the pair of Tufted Titmice above mentioned, and later on a pair accompanied by their now almost fully-fledged young.

*Turdus mustelinus*.—Common throughout the woodland.

*Merula migratoria*.—Abundant as usual.

*Sialia sialis*.—Several observed in an upland pasture on one occasion.

Clearfield County lies to the northeast of Indiana County, which it borders on the west to some extent. As a whole its elevation is greater, everywhere being above 1500 feet, and over a considerable area more than 2000 feet, this latter region including the Alleghany Mountains on the extreme southeastern part of the County and the somewhat less elevated portion lying immedi-

ately to the west, and extending for some distance into Indiana County. My notes were all made in the vicinity of Coalport, a mining town near the southern border of the county. This point was chosen because of its intermediate position with reference to Cresson on the one hand, whose summer birds Mr. Dwight has studied,<sup>1</sup> and DuBois, in the extreme northwestern part of Clearfield County, on the other hand, of whose breeding birds the Department of Agriculture possesses a very full and interesting manuscript list, compiled by Dr. Walter Van Fleet. This list includes nearly all the relatively northern species given by Mr. Dwight, as well as several others which he did not find, and, taken in connection with the present paper, goes to prove the correctness of Mr. Dwight's surmise that "much of northern and western Pennsylvania is at an altitude which, when combined with forest, cannot fail to attract birds of the Canadian avifauna." The influence of the character of the forest upon the distribution of birds was illustrated at Coalport where the extension of coniferous forest to the uplands was accompanied by a corresponding increase in the number and abundance of northern birds. These woods, composed almost wholly of *Pinus strobus* and *Tsuga canadensis*, were found on the hilltops and in the bottoms. *Pinus rigida* was not observed. The red-berried elder (*Sambucus pubens*) was another abundant and characteristic plant there, forming thickets at favorable points.

The country surrounding Coalport, like most of western Pennsylvania, is of a broken, hilly nature, intersected by numerous small streams. My collecting was mostly done in a tract of upland woods lying on both sides of one of these streams, where the slope was not steep. It was second-growth for the larger part, and in places quite bushy, though the numerous cattle-paths which penetrated it in all directions rendered progress through it quite easy. This proved to be a favorite place for Blue Yellow-backed, Black-throated Blue, Black-and-yellow, Blackburnian, Black-throated Green, and Canadian, Warblers, all conspicuously musical. Here, too, Hermit Thrushes were most numerous, and Snowbirds were frequently met with, as well as the only Winter Wren noticed. Several pairs of Chestnut-sided Warblers were found here also, but they were not half so common as the other Warblers mentioned.

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<sup>1</sup> Auk, IX, 1892, 129-141.



On June 30, after exploring a swampy rhododendron thicket where I found northern Warblers numerous, among them several pairs of Water-thrushes, I came to one of the few tracts of original forest that are left in this neighborhood. I found it to be a thick wood of white pine and hemlock, with no undergrowth to speak of excepting along a small stream flowing through its midst. Scattered here and there were enormous trees of both these kinds, three and four feet through at the base, and rearing their lofty heads far above the general level of the treetops. Here is the haunt of the Blackburnian and Black-throated Blue Warblers, whose songs are heard on every hand, while from high overhead come the slender filing notes of the Black-throated Green Warbler and the cicada-like humming of the Blue Yellow-backed. Snowbirds, too, were occasionally seen, and Wood Thrushes.

Only fifty-five species were recorded during my stay at Coalport, which was from June 28 to July 2, 1892. That this is less than half the actual number breeding is evident by a comparison with Mr. Dwight's list for Cresson and Dr. Van Fleet's for DuBois. Eight species, all except two very common, were found whose affinities are with the Canadian Fauna, as follows: *Junco hyemalis*, *Dendroica caerulescens*, *Dendroica maculosa*, *Dendroica blackburniæ*, *Seiurus noveboracensis*, *Sylvania canadensis*, *Troglodytes hiemalis*, and *Turdus aonalaschkæ pallasii*.

Four in their southern breeding limit characterize the Alleghanian zone: *Empidonax minimus*, *Dendroica pensylvanica*, *Dendroica virens*, and *Parus atricapillus*.

Eight in their northern breeding limit likewise characterize the Alleghanian zone: *Antrostomus vociferus*, *Sturnella magna*, *Icterus galbula*, *Pipilo erythrophthalmus*, *Piranga erythromelas*, *Galeoscoptes carolinensis*, *Harporhynchus rufus*, and *Turdus mustelinus*.

These facts seem to justify the conclusion that the district is Alleghanian in its fauna, with a very decided Canadian element however, which latter is probably greater than was apparent from my limited observations.

The following is a complete list of the birds observed during my stay.

**Bonasa umbellus.** — Only one individual seen; found in the second-growth.

**Zenaidura macroura.** — Common in the open, especially near houses.

**Accipiter velox.** — One, which from its actions doubtless had young near by, was seen on the edge of a dense coniferous forest.

**Accipiter cooperi.** — A single pair, also evidently with young, were the only ones observed.

**Dryobates villosus.** — Several seen in the timber.

**Dryobates pubescens.** — Not uncommon in the woodland.

**Melanerpes erythrocephalus.** — But one bird noted.

**Colaptes auratus.** — Numerous everywhere except in the deep woods.

**Antrostomus vociferus.** — Numbers heard every night.

**Chordeiles virginianus.** — A few observed on one occasion.

**Chætura pelagica.** — Quite common.

**Trochilus colubris.** — Seen but once.

**Tyrannus tyrannus.** — A pair had a nest in one of the trees near the house where I was staying.

**Myiarchus crinitus.** — Not common; one pair was observed, whose nest was in the top of a tall forest tree.

**Sayornis phœbe.** — A single individual was met with near a house on the outskirts of the town.

**Contopus virens.** — Rather common, numbers being seen daily, mostly on the edge of the woods.

**Empidonax minimus.** — One pair observed in the trees near the house, in one of which they must have had a nest.

**Cyanocitta cristata.** — Frequently noticed in the woodland, and sometimes about houses.

**Corvus americanus.** — A very common species almost everywhere.

**Sturnella magna.** — Quite common in the open fields, where it was found daily.

**Icterus galbula.** — This species, although not actually observed by me, is yet entitled to a place on the list from the fact that I was shown, for identification, an example of its nest which had been taken a few years before and preserved as a great and rare curiosity for this part of the country.

**Spinus tristis.** — Seen on only one occasion, — though perhaps more common than was apparent.

**Poocætes gramineus.** — Found commonly in its usual haunts.

**Spizella socialis.** — Abundant throughout the open.

**Junco hyemalis.** — This species I found at intervals throughout the forest, and in some places it was fairly abundant. Its favorite haunts were the edges of woods, tracts of scrub, and rich second-growth woods, though some were detected in the depths of the original hemlock and pine forest, where they were usually found hopping about on the ground. In other situations it was the rule to find the males perched in the very tops of some tall tree which had been left standing, singing for hours at a time. Although so common, various circumstances unfortunately conspired to

prevent my preserving more than one specimen—a female. This was submitted to Mr. Ridgway to learn if it bore any relationship to *carolinensis*, and he has very kindly compared it and in a note to me states as follows: “Your Junco from Coalport, Pa., is *very* close to *J. h. carolinensis*. In fact, is quite typical of that race as to color of plumage and bill, but bill is too slender. Possibly a larger series of female *carolinensis* would show specimens with bill equally as slender, but we have only the two specimens.” It would of course be out of the question to conclude that the Snowbirds of this section all belong to this subspecies on the evidence of a single specimen, especially in view of Mr. Dwight’s recent researches on the subject. I regard the bird secured as being merely an extreme case.

**Melospiza fasciata.**—Abundant in suitable situations everywhere.

**Pipilo erythrophthalmus.**—A few found in the second-growth.

**Habia ludoviciana.**—Abundant everywhere except in the original forest.

**Passerina cyanea.**—Of frequent occurrence; found mostly along the roadsides.

**Piranga erythromelas.**—Abundant in the woodland, especially so in the hemlocks.

**Chelidon erythrogaster.**—This species, the only Swallow found, was very abundant about farmhouses.

**Ampelis cedrorum.**—Numerous; seen every day in the trees about the house.

**Vireo olivaceus.**—Common, most so in the second-growth.

**Mniotilta varia.**—This species seemed to share in the general abundance of Warblers which is so characteristic a feature of the avifauna of this locality, being much more numerous than in any other section I have visited heretofore. It frequented the second-growth for the most part.

**Compsothlypis americana.**—Found in the original forest as well as in the second-growth, and in both these situations abundant, but usually keeping high up.

**Dendroica æstiva.**—Met with only about houses, and apparently not common.

**Dendroica cærulescens.**—Abundant throughout both the second-growth and the original forest.

**Dendroica maculosa.**—Very abundant in the same situations as the last species, but as a rule keeping lower down in the bushes and undergrowth.

**Dendroica pensylvanica.**—Numerous in the second-growth, but not nearly as abundant as several other Warblers, in spite of the apparent suitability of the place to its needs.

**Dendroica blackburniæ.**—Another very abundant species, met with both in the second-growth and in the original forest.

**Dendroica virens.**—Abundant throughout the woodland in all situations.

**Seiurus aurocapillus.**—Abundant everywhere in the woods.

**Seiurus noveboracensis.**—Several pairs were met with in a swampy rhododendron thicket in a semi-wooded bottom, along a small stream.

*Geothlypis trichas*.—Rather common about the thicket where the last species was noticed, and seen also elsewhere. One individual was observed whose song was peculiar, an extra syllable being added, whose timbre most resembled that of the Kentucky Warbler's chirp.

*Sylvania canadensis*.—Not observed in the depths of the original forest, though perhaps found there to some extent; abundant in the thickets and in the second-growth, especially about damp places, where its sprightly song was constantly to be heard.

*Galeoscoptes carolinensis*.—Abundant in the second-growth as well as about dwellings.

*Harporhynchus rufus*.—A few observed.

*Troglodytes ædon*.—Four pairs in all were noted, which is a larger number than I have ever before met with in an equal extent of territory. All were found near dwellings, except one which haunted a deserted saw-mill on the edge of a wood.

*Troglodytes hiemalis*.—One pair only met with, in the denser second-growth, where I listened to its enchanting song, and on the last day of my stay succeeded in securing it.

*Sitta carolinensis*.—Of infrequent occurrence.

*Parus atricapillus*.—A pair observed constantly near the house, in the immediate vicinity of which they no doubt had a nest.

*Turdus mustelinus*.—Common throughout the woodland.

*Turdus aonalaschkæ pallasii*.—Fully as numerous as the last species; but, unlike it, found mostly in the more open woods and the second-growth.

*Merula migratoria*.—Found commonly about houses.

*Sialia sialis*.—A few observed by the roadside on one occasion.