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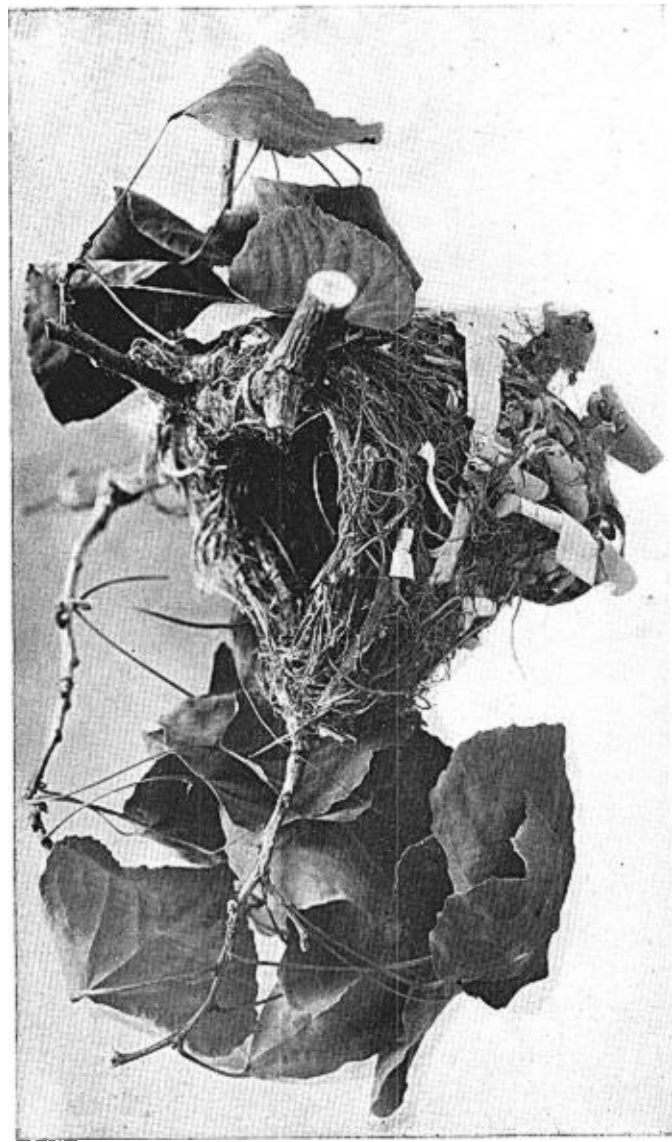
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FURTHER NOTES ON THE PHILADELPHIA VIREO,
WITH DESCRIPTION OF THE NEST AND EGGS.

BY WILLIAM BREWSTER.

Plate XI.

IN THE 'Bulletin of the Nuttall Ornithological Club' for January, 1880, I published some 'Notes on the Habits and Distribution of the Philadelphia Vireo (*Vireo philadelphicus*).' This article was followed in 1897 by Dr. Dwight's 'A Study of the Philadelphia Vireo (*Vireo philadelphicus*),' which gives by far the fullest and best account of the bird's habits, and especially of its song, that has ever appeared. Of its breeding habits we still know very little. "On the 9th of June, 1884, while camped near Duck Mountain," Manitoba, Mr. Seton found a nest which "was hung from a forked twig about eight feet from the ground, in a willow which was the reverse of dense, as it grew in the shade of a poplar grove. The nest was pensive, as usual with the genus, formed of fine grass and birch bark. The eggs were four in number, and presented no obvious difference from those of the Red-eyed Vireo, but unfortunately they were destroyed by an accident before they were measured . . . The bird on being shot answered perfectly to Coues's description, except that on the breast it was of a much brighter yellow than I was led to expect." (Ernest E. T. Seton, *Auk*, II, 1885, pp. 305, 306). The identification of this nest must be accepted, of course, as wholly satisfactory, but that of



NEST AND EGGS OF PHILADELPHIA VIREO. (Eggs natural size.)

the nest taken in 1895 at Lansdowne, Ontario, Canada, by Mr. Young and attributed by him with apparent confidence to the present species, leaves much to be desired. The parent birds, he tells us, were merely "observed" through "strong field glasses." Although "*decidedly* smaller than the Red-eye" they were "more bulky in shape," while "the yellow shading of the breast was not very evident." These statements are not calculated, on the whole, to inspire confidence, especially as Mr. Young admits that he "had never met with the species before." Had he been familiar with its appearance in life he would have known that it looks less instead of "more bulky" than the Red-eye and that the yellow of its under parts is invariably conspicuous when the bird is viewed in a good light. The chances are that the Vireos he saw were merely small individuals of *V. olivaceus*. At all events the record is not supported by good enough evidence to be worth serious consideration. The nest to which it relates was built in a low shrub (*Spiraea salicifolia*) and contained, in addition to two eggs of the Cowbird, a single egg of the rightful owner which "was marked exactly like that of the Red-eye Vireo but was smaller, and according to its size was rather more globular in shape" (C. J. Young, Auk, XV, 1898, pp. 191, 192).

As I reported in 1880 (in the article above mentioned), the Philadelphia Vireo is a not uncommon summer resident of the region lying about Lake Umbagog in western Maine and northern New Hampshire where its favorite haunts are second-growth woods about the edges of farms or other openings and burnt lands sparsely covered with young poplars and paper birches. In places of this character I found it very generally if somewhat sparingly distributed during the greater part of June, 1879, but although the behavior of several pairs which I had under almost daily observation that season convinced me that they were breeding I failed to discover any of their nests. Nor was I more fortunate in 1881 when the numbers of the birds appeared to be unchanged. My next spring visit to Umbagog was made in 1896 when, with the assistance of Mr. C. H. Watrous, Mr. R. A. Gilbert and one of the local guides, I devoted upwards of five consecutive weeks (May 12-June 15) to looking for rare birds and nests in the immediate neighborhood of the lake. The corre-

sponding period of the following year was also spent in the same locality with the same companions. The field work accomplished during these two seasons was by far the most thorough and successful of any that I have ever done, before or since, in this region, yet on both occasions I failed to meet with the Philadelphia Vireo after the close of its vernal migration, although I searched for it faithfully and persistently in the places where I had seen it in former years, as well as in other similar localities. Whether it was really absent during these two summers or, for some reason, not in full song up to the date of my departure — in which case I might easily have overlooked it — I am not, of course, able to say, but I can confidently affirm that it reoccupied certain of its ancestral haunts near the southern end of Lake Umbagog during the past season, and that at least one pair attempted to breed there, for I found and took their nest and eggs.

This piece of good fortune fell to my lot quite unexpectedly and by the merest chance — as so often happens in such cases. I had gone to the lake on June 11 with no thought of doing any field work but chiefly for the purpose of superintending the packing and shipment of a portion of my camping outfit for which I had prospective use elsewhere. The 12th and 13th were stormy days, admirably adapted for continued and contented application to drudgery of this kind. On the 14th, however, the weather was perfect, and as my task was practically finished I started for a walk immediately after breakfast. On reaching the woods I found them so very wet, after the heavy rains of the preceding two days, that I was glad to follow a road that led through an extensive tract of second growth poplars and paper birches, intermingled with a few balsams and red spruces. I had gone but a short distance into this cover, when an unfamiliar looking plant growing by the roadside arrested my attention. As I paused to examine it, I became conscious that a Vireo which I took, at first, to be a Red-eye, was singing in an aspen (*Populus tremuloides*) directly overhead. No doubt I had been hearing him for some time, letting the sound “pass in one ear and out the other,” as most of us are accustomed to do when the tiresome ‘Preacher’ is holding forth. Nor is it likely that the song of this particular bird would have finally attracted my notice had it not suddenly

occurred to me that the notes of the Philadelphia Vireo are closely similar to those of the Red-eye and that I had found the former species in this very same piece of woods in 1879. No sooner had this thought entered my mind, than I began to give critical attention to the voice that continued to come almost unceasingly from somewhere among the upper branches of the aspen. It was exceedingly like that of *Vireo olivaceus* but pitched in a slightly higher key, while the notes were less varied and separated by decidedly wider intervals. One of them, moreover, was dissimilar in form to anything that the Red-eye habitually utters. As I noted these slight peculiarities it came back to me that they were all characteristic of the song of the Philadelphia Vireo which, by the way, I had last heard in 1881, and hence did not remember very vividly. All the while I had been momentarily expecting to get a sight at the singer, or, at least, to ascertain his exact position, for there was not a breath of wind and no bird, however small, could have stirred among the easily agitated leaves of the aspen without betraying his whereabouts. The leisurely, halting song, however, continued to afford the only tangible evidence that a Vireo was concealed somewhere among the dense, deep green foliage. After encircling the tree a dozen times or more, tilting my head upwards until the muscles of my neck ached intolerably, I lost all patience and deciding that the bird must be sitting quite motionless on some leafy twig — as Vireos will sometimes do for many minutes at a time, when singing in the heat of the day — I collected a number of stones with the intention of throwing them at random into the denser parts of the tree, hoping thereby to dislodge the sluggish bird. Just as I was about to carry this plan into effect it occurred to me that the males of certain of our New England Vireos are given to singing on the nest while taking their turns at incubating the eggs.¹ This reflection caused me to drop the stones and begin looking for a nest instead of a bird. A few moments later I saw, through an opening in the foliage, in the very middle of the tree, scarce ten feet below its topmost twigs and fully thirty feet above the ground, a globular object of a light

¹I have never known the Red-eye to do this but it is a common if not regular practice with the Warbling and Solitary Vireos.

grayish brown color. Holding my glass on it with some difficulty — for I was now actually trembling with excitement — I made it out clearly to be a small, neatly-finished and perfectly new-looking Vireo's nest attached to a short lateral twig of one of the long, upright terminal shoots that formed the crown of the aspen. Looking still more closely I could see the head of the sitting bird and even trace the swelling of his throat and the slight opening of his bill as he uttered his disconnected notes. Soon after this he left the nest and flying to a neighboring tree alighted on a dead twig where I had a clear view of him and quickly satisfied myself that without question he was a Philadelphia Vireo. He looked no larger than a Nashville Warbler, and his breast, when he turned it towards the sun, appeared bright yellow, while his throat was unmistakably — if less strongly — tinged with the same color. It was fortunate that I was able to thus positively identify him by sight at this particular time. Had I not done so I should have continued my walk without troubling myself further about either him or his nest, for the song which he now began — and continued, with occasional brief pauses, for upwards of ten minutes — was to my ears *absolutely indistinguishable from the typical song of Vireo olivaceus*. The voice appeared to be the same in pitch as well as quality, the notes similar in both form and expression, and the delivery equally rapid. I regret that it did not occur to me to time the number of separate utterances per minute, but I feel sure that there must have been as many as the most voluble 'Preacher' often succeeds in producing. Dr. Dwight says that "*V. philadelphicus* sings at the rate of from twenty-two to thirty-six notes a minute, averaging a trifle over twenty-six, while *V. olivaceus* rattles on at the rate of from fifty to seventy, their song rate averaging a trifle over fifty-nine." This, no doubt, is ordinarily true, but equally without question the rule just quoted is not always adhered to by either species — as, indeed, Dr. Dwight seems to have known, or at least suspected. His comparative description of the songs of the two birds is so good and true at most points that, as a whole, it is not likely to be ever improved upon. Nevertheless by reason of its very depth and subtilty of analysis it tends to obscure what is really the crux of the whole matter, viz., the fact that the differences with which it deals so

ably are too slight and inconstant to be easily recognized or safely relied on as a means of identification. In other words, only those who possess critical and highly trained ears can hope to distinguish the Philadelphia Vireo from the Red-eye by its song alone, while even the experts in such matters are likely to be occasionally deceived.

The bird which we left perched on the dead branch remained there, as I have just said, upwards of ten minutes, basking in the sunshine and pouring out a perfect flood of song. At the end of this period he flew directly back to the nest and on entering it at once resumed the listless, interrupted singing which I have already described. I am nearly sure that he did not again leave it that forenoon, for whenever I revisited it—as I did every fifteen or twenty minutes—I found him still there and still singing. He seemed rather ill at ease, keeping his head in almost constant motion and occasionally turning half around in the nest. Once he stretched his neck well out and down over the rim to seize the loose end of one of its component strands, which he tugged at so violently with his bill as to perceptibly shake the whole structure. Perhaps this was done merely to relieve his evident ennui, or he may have been giving vent to irritation caused by the prolonged absence of his mate, who was not seen at all on this occasion.

When we took the nest, early the next morning (about six o'clock), the male was again sitting and beguiling himself as before by frequent snatches of his leisurely song. He did not leave the nest until my assistant, Mr. Gilbert, reached and slightly shook the branch to which it was attached, when he flew directly off out of sight through the woods—no doubt in search of his mate, for he returned with her a few minutes later. Both birds came close about Gilbert's head while he was still in the top of the tree, making their low scolding note which so closely resembles that of the Warbling Vireo, but the male seemed shy and suspicious and soon departed again. The female was much tamer and showed more concern, remaining in the tree until she was finally shot—just after the nest and eggs had been safely lowered to the ground. On skinning her I found that she would have added no more eggs to the three perfectly fresh ones which were found in the nest.

The nest was hung, after the usual Vireo fashion, in a fork between two diverging, horizontal twigs. One of these, a lateral branch from the upright shoot already mentioned, is rather more than a quarter of an inch in diameter and evidently formed the chief support, as the other twig is scarce thicker than the flower stem of a buttercup. The nest is firmly bound to both for some distance along its rim. It is much longer than broad, measuring externally 3.20 inches in length, 2.75 in width, and 2.65 in depth; internally 2.00 in length, 1.50 in width, and 1.35 in depth. Its walls are more than half an inch thick in places, its bottom almost a full inch. It appears to be chiefly composed of interwoven or closely compacted shreds of grayish or light brown bark, apparently from various species of deciduous trees and shrubs as well as, perhaps, from dried weed stalks. The exterior is beautifully decorated with strips of the thin outer bark of the paper birch, intermingled with a few cottony seed tufts of some native willow still bearing the dehiscent capsules. Most of these materials are firmly held in place by a gossamer-like overwrapping of gray-green shreds of *Usnea*, but here and there a tuft of willow down or a piece of curled or twisted snow-white bark was left free to flutter in every passing breeze. It would be difficult to imagine anything in the way of external covering for a bird's nest more artistically appropriate and effective. The interior, too, is admirably neat and pretty, for it is lined with the dry, tan-colored needles of the white pine (among which are a very few slender blades of grass), arranged circularly in deep layers around the sides and bottom of the cup in which the eggs were laid. Most of these materials are also used habitually by the Red-eye, but the nest of the latter is seldom, if ever, so liberally and tastefully decorated. That of the Solitary, however, is occasionally ornamented in much the same way and to a nearly equal degree. The nests of both these species, as well as those of the Warbling and Yellow-throated Vireos, are almost invariably larger, rounder and relatively shallower than this nest of the Philadelphia which, indeed, most nearly resembles that of the White-eyed Vireo in size and proportions, although the nest of the latter is usually much deeper and more purse-shaped.

The eggs measure respectively $.80 \times .54$; $.81 \times .53$ and $.79 \times$

.54 (one hundredths of an inch). They are elongate ovate in shape and pure white, sparsely spotted with burnt umber, chocolate and dull black. Most of the markings are small and rounded while many of them are mere specks. On two of the eggs they are rather generally distributed save about the smaller ends which are immaculate, but on the third egg they are practically confined to the larger end. All three eggs resemble most closely those of the Red-eyed Vireo but they are decidedly smaller than average eggs of that bird, while in respect to shape they are unlike any Vireo's eggs in my collection, a peculiarity which is not likely to prove constant, however. Many of my Red-eye's eggs have similarly clear white shells, but all the eggs of the Warbling Vireo, in my collection, are more or less strongly tinged with cream color, and with most of them the dark markings are blacker and somewhat coarser than in these eggs of *V. philadelphicus*.

As I have already said, the Philadelphia Vireo's nest found in Manitoba by Mr. Seton was only about eight feet above the ground, in a small willow, while that which I took at Lake Umbagog was at a height of fully thirty feet in a well-grown aspen. Which of these two situations comes the nearer to being the usual or typical one cannot be settled, of course, on the basis of evidence so scanty and conflicting as that above mentioned. No doubt the nest will be found to vary considerably in position — as well as details of construction — in different regions or even with different birds in the same region; but I am now inclined to believe (although with Dr. Dwight I have hitherto had a directly opposite impression) that in northern New England, at least, it will prove to be ordinarily built, like that of the Warbling Vireo, in the tops or among the upper branches of good-sized trees. If this be so it is no longer difficult to understand why those of us who have spent season after season in places where the Philadelphia Vireo breeds rather numerously have looked in vain for its nest in thickets or among the lower branches of the trees.