A Preliminary Report on the
Nesting Habits of the Red-Eyed Vireo

By Fred R. Cagle

1938

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This study was carried on in the vicinity of the Biological Station, Douglas Lake, Michigan, during the summer of 1938. In order to facilitate procedure, the work was divided into three parts: a nest survey to determine breeding habitat and possibly territorial demands, nest analysis and observation of adult activities in relation to the nest.

Nesting sites:

Although a rather intensive study was made of the area south and north-west of the Biological Station, only eleven nests were located. All of these were near open areas in thin woodlands. No nests were found in densely wooded areas. Of the nests examined, one was in a dogwood tree, one in a chestnut, one in a basswood and seven in red maples.*

No nests were found in aspens, although they were abundant in most of the areas studied. All of the nests were in small saplings.

Nest:

The typical vireo nest is constructed of a firm cup-shaped framework of coarse bark suspended from the two branches of a forked twig and lined with fine plant materials. The outside is covered with thin wide strips of white birch bark plus-

tered to the framework with spider silk. Large patches of
silk may adhere to the outside of some nests. Spider silk,
bark, and occasionally bits of thread are woven together to
form a firm support for the nest. A forked twig near the
end of a low branch is usually chosen, the size of the fork
controlling the size of the nest. Details of the various
nests examined may be seen in Figure 1.

The completed nest of the vireo is a well built,
sturdy structure that can weather a violent wind. The young
of the Red Eyed Vireo are much crowded in this small nest and
it is usually sadly dilapidated after a brood has used it.
Roberts stated that it remained in place for several years.

Nest 8 was of particular interest in that the bird
had added additional support by carrying a long, tough piece
of bark around a twig vertical to the nest (Figure 2). Each
end of the bark was firmly woven into opposite sides of the
nest. This additional diagonal support helped to hold the
nest in place. No such structure was observed in other nests.

Another nest (nest 7) found was either incomplete or
a false nest. It consisted of a shallow frame work of bark
firmly attached to a forked twig. There was no evidence of
lining or covering and the frame work was much too shallow for
a true nest (Figure 3).

Eggs:

Each of the three nests studied contained three
vireo eggs. Nest 1 contained two cowbird eggs in addition
to the vireo eggs.

*A note on pg. 29 of Auk, 1910 states that the vireo, like the
marsh wren, seems to build extra nests.
Measurements of the eggs were:

<table>
<thead>
<tr>
<th></th>
<th>Length</th>
<th>Diameter</th>
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<tbody>
<tr>
<td>Nest 1</td>
<td>2.0</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>2.2</td>
<td>1.49</td>
</tr>
<tr>
<td></td>
<td>2.5</td>
<td>1.48</td>
</tr>
<tr>
<td>Nest 3</td>
<td>1.94</td>
<td>1.4</td>
</tr>
<tr>
<td></td>
<td>1.95</td>
<td>1.37</td>
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<tr>
<td></td>
<td>1.96</td>
<td>1.35</td>
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</table>

It is interesting to note that the second set of eggs are uniformly smaller than those of Nest 1.

The eggs are light colored with thin mottlings and speckings of brown.

Incubation activities:

There was ample opportunity to study incubation in connection with one nest. The same bird was always incubating and no other bird was ever seen near the nest. Roberts stated that the male helps incubate however.

This bird is an ambitious incubator and refuses to move from the nest unless approached very closely. It is a close sitter and sleeps while incubating. In fact Roberts observed a bird "snoring" while on its nest.

The first nest observed contained three vireo eggs and two cowbird eggs. The observer punctured one of the vireo eggs very slightly while measuring it and the next day this egg was missing. A cowbird egg was then punctured to check on this egg eliminating activity, and parts of the shell were found beneath the nest the next day. The bird continued to incubate the other eggs; but, during the next few days, another of the vireo eggs disappeared leaving one vireo egg and one cowbird egg in the nest. Shortly afterwards the cowbird
hatched and was removed from the nest. At the same time two phoebe eggs containing small embryos were added to the nest. The bird, although evidently noting the new eggs, accepted them and continued to incubate them along with the single vireo egg which was quite evidently added.

It is interesting to note that this bird readily removed the slightly punctured egg but failed to detect the strange cowbird and phoebe eggs or the added vireo egg.

The incubating bird in another nest tolerated a broken egg for two days before removing it. Herrick witnessed this egg removing activity of the vireo but stated that there was much difference between individuals in this respect.

No complete incubation records were obtained.

Herrick states fourteen days; Bergtold twelve to fourteen.

Development of young:

The young are quite helpless when they leave the nest. They are unable to fly but can run and climb quite complete development and phoebes that hatched in one nest were studied until their death. Data as to their weight increase is presented in tables 1 and 2.

The nestlings, although unable to fly, are well protected by their plain olive-green color and the softness of their down. These facts are indicated in table 1. Nestlings 1 and 2 gained weight very slowly during the first three days after hatching just left the nest are exceedingly difficult to locate and due apparently to the delayed hatching of the third egg. This indicates that the bird incubated the third egg and did not actively supply food to the new nestlings. Once feeding started all three nestlings grew at an almost equal rate and left the nest at the same time. Thus nestlings 1 and 2 left the nest in thirteen days while nestling 3 left the nest in ten
days time.

These weights illustrate well the fact that the
nestlings decrease in weight before leaving the nest.

The two phoebe eggs added to Nest 1 hatched in a
few days time, one egg two days after the other. Both birds
developed rapidly for a few days and were then found dead in
the nest. One of them had evidently been severely pecked about
the head; the other had no signs of injury. Both birds had
full stomachs so starvation could not have been a factor.

Nestlings in Nest 3 were not weighed regularly or
disturbed in order that a normal nest life might be observed.
These birds left the nest in twelve days and were almost iden-
tical in weights and development with the nestlings of Nest 2
when they left the nest at the end of thirteen days.

The young are quite immature when they leave the
nest. They are unable to fly but can run and climb quite well.
In both nests young birds were observed within fifty feet of the
nest two days after they had left the nest. Adults were observed
feeding young birds well able to fly and as large as themselves.

The nestlings, although unable to fly, are well pro-
tected by their plain olive-green color and their habit of re-
main ing very quiet until actually touched. Nestlings having
just left the nest are exceedingly difficult to locate and
were found only through observation of the female bird.

Feeding habits:

The vireo feeds mainly on insect forms but it occa-
sionally eats various berries. The young are fed small larvae
for the most part but sometimes beetles, spiders and large
larvae are presented to the nestlings.

The adults secure their food from the trees and underbrush in the immediate vicinity of the nest. They are expert insect hunters and are able to capture those larvae that are best protectively colored. They do not hesitate to attack large insects. In several instances they were observed beating large larvae over the limbs and then tearing them into eatable pieces. Miss Drum observed a bird killing a large luna moth by beating it violently against a limb. In one instance the male brought a large larva to the nest and the female aided him in tearing it into pieces small enough for the nestlings.

The vireo feeds most actively in the morning, at noon, and during the late afternoon. Both the male and female feed the young. They may feed as many as one hundred times in the nine hours from eight P.M. to five A.M. and earlier.

Stomachs of the two phoebes fed by the Red Eyed Vireo contained an abundance of portions of cephalothorax and legs of spiders, numerous beetle remains and many horny mandibles of leaf eating insect larvae. One contained an abundance of insect eggs undoubtedly digested from the adult insect.

Summary:

The following facts of interest are pointed out in this paper:

1. The vireo prefers thin woodlands for a nesting area. They definitely prefer the small maple saplings found in such an area.
2. The nest is a well built protectively colored structure.

3. The vireo readily detects and removes injured eggs from the nest but incubates addled or strange eggs.

4. Usually three eggs are laid. They hatch in ten to fourteen days and the young leave the nest in ten to thirteen days. They are unable to fly but well protected by their coloration and instinctive urge to remain very quiet when danger threatens.

5. The vireos feed principally on insects, large and small. Larger insect forms are torn into pieces of eatable size. Spiders and beetles form a portion of their diet.

6. The male is an excellent and energetic songster. He sings while hunting and while feeding the young.
Table 1.

Nestlings in Nest 2

Table 2.
Weight in Grams

Days Old

Two Phoebes in Nest 1

Table 2.
### Red Eyed Vireo Nests Examined

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<tbody>
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<td>1</td>
<td>7.5</td>
<td>6.5</td>
<td>12cm</td>
<td>Grass, small twigs bark</td>
<td>Coarse</td>
<td>Birch bark, silk &amp; bark</td>
<td>Spider silk</td>
<td>✓ Cornus florida</td>
<td>6mm. fth. sheath</td>
<td></td>
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<tr>
<td>2</td>
<td>6.6</td>
<td>8.7</td>
<td>18cm</td>
<td>Pine twigs</td>
<td>Coarse</td>
<td>Birch bark</td>
<td>silk</td>
<td>Acer rubrum</td>
<td>4mm. fth. sheath</td>
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<td>3</td>
<td>6.0</td>
<td>6.1</td>
<td>18cm</td>
<td>weed fibers</td>
<td>Coarse</td>
<td>Birch bark, silk &amp; bark</td>
<td>Spider silk</td>
<td>Acer rubrum</td>
<td>8cm.</td>
<td></td>
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<tr>
<td>4</td>
<td>7.2</td>
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<td>45cm</td>
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<td>Birch bark, silk &amp; bark</td>
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</tr>
<tr>
<td>5</td>
<td>5.8</td>
<td>5.5</td>
<td>12cm</td>
<td>Pine twigs, grass, fine bark</td>
<td>Coarse</td>
<td>Birch bark, silk &amp; bark</td>
<td>Spider egg cases</td>
<td>Acer rubrum</td>
<td>5mm. fth. sheath</td>
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<tr>
<td>6</td>
<td>6.9</td>
<td>5.7</td>
<td>12cm</td>
<td>Pine twigs, weed stalks bark, leaf, bark, egg cases</td>
<td>Coarse</td>
<td>Birch bark</td>
<td>silk, dead</td>
<td>Acer rubrum</td>
<td>5mm. fth. sheath</td>
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<tr>
<td>7</td>
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<td>Acer rubrum</td>
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<tr>
<td>8</td>
<td>6.0</td>
<td>6.6</td>
<td>12cm</td>
<td>Grass</td>
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<td>9</td>
<td>5.8</td>
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<td>fine</td>
<td>twigs &amp; grass</td>
<td>Coarse</td>
<td>Birch bark, silk &amp; bark</td>
<td>Tilia</td>
<td>down fth</td>
<td></td>
<td></td>
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</tbody>
</table>

Figure 1. Good idea.
Nest 8 in open, windswept area.

Figure 2.