

## THE CONNECTICUT WARBLER IN MICHIGAN

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THE breeding area of the Connecticut Warbler, *Oporornis agilis*, extends from the Peace River area of British Columbia (Cowan, 1939) eastward through Alberta (R. C. Harlow in Bent, 1953; Soper, 1949; Godfrey, 1952), Saskatchewan (Godfrey, 1950), Manitoba (Seton, 1884; Macoun and Macoun, 1909; Cartwright, 1931; Short and Waller, 1937; Godfrey, 1953), Ontario (Magee, 1923; Baillie and Harrington, 1937; Baillie, 1950; Todd, 1943; Smith, 1957; Brown, 1947) to Quebec (A.O.U. *Check-list*, 1957; Smith, 1957). The southward limits apparently are in northern Minnesota (Huff, 1929; Kilgore and Breckenridge, 1929), northern Wisconsin (Gromme, 1942), and northern Michigan. A considerable number of observations have been accumulated during more recent years in northern Michigan. Because these have been made at the southern limit of the breeding range, they are of importance to our knowledge of the distribution as well as the general biology of the species.

## MICHIGAN RECORDS

There have been many misidentified birds recorded as Connecticut Warblers in the Michigan literature. We will attempt here to make the necessary corrections.

1. O. B. Warren (1895: 192) reported a nest of the Connecticut Warbler in Marquette County in August 1894 but later (1898: 193) wrote that it was a mistake and that these birds were Yellowthroats (*Geothlypis trichas*).

2. N. A. Wood (1905: 178), and Wood, Peet, and McCreary (1906: 119) claimed that a female and young were taken in the Porcupine Mountains, Ontonagon County, in the summer of 1904. Wing (1940: 191) and Wood (1951: 414) corrected this when they found the birds were Mourning Warblers (*Oporornis philadelphia*).

3. E. A. Arnold (Kilgore, 1930: 24, 26) is said to have collected a set of two eggs of the Connecticut Warbler 27 May 1899 in Calhoun County. Since we have lived nearly all of our lives in and adjacent to Calhoun County, and we and no one else has ever seen the species there in summer, we feel this record is not valid. Mourning Warblers occasionally will remain this far south in Michigan, but we know of no logical Connecticut Warbler habitat in this or any nearby county.

4. J. Claire Wood (1905: 130) has recorded a sight observation of this species near Detroit, 3 July 1905, but this has already been discounted by Zimmerman (1955: 15), and we agree with Zimmerman.

5. Josselyn Van Tyne (1923: 25) observed a pair on 19 July 1919 at Mismar Bay, Les Cheneaux Islands, Mackinac County. The female had food in her bill and scolded as though young were nearby. He also saw a female bird near

Hessel, Mackinac County, on 9 August 1919. These appear to be the first authentic summer records.

6. Cheboygan County, Burt Lake. Fortner and Metcalf (1929: 250) observed two Connecticut Warblers on 12 July 1921 in a cedar bog but gave no details. The birds were not collected.

7. Chippewa County, Munuscong State Park. On 10 June 1934 Walkinshaw collected a singing male and observed another on 14 June 1934.

8. Luce County, McMillan. Bryens (1941: 48) observed a Connecticut Warbler south of here on 23 July 1922. The area in which he lived was not typical breeding habitat, so the bird must have been a wanderer. In the great Tahquamegon Swamp, Walkinshaw (1936: 220) found two singing males on 9 June 1935 and observed these birds 10, 11, 12, and 18 June 1935. We returned to the area in 1948 and observed two singing males daily from 23 June until 3 July. We observed another singing male here on 2 July 1958.

9. Alger County, five kilometers (three miles) east of Shingleton. On 1 July 1941 G. A. Ammann (1944: 48) observed a singing male.

10. Chippewa County, Trout Lake. On 29 May 1948 Ammann (Wallace and Black, 1948: 173) found seven, possibly eight, singing male Connecticut Warblers.

11. Schoolcraft County, Seney, five kilometers (three miles) east. We found a singing male here on 26–28 June 1952.

12. Ontonagon County, seven kilometers (four and a half miles) north of Ewen. Arthur Peters (notes to University of Michigan Museum of Zoology) found several singing males in the summer of 1954. On 21 June 1956 Dyer with Dr. and Mrs. W. Powell Cottrille observed several singing males. On 13, 17, and 18 June 1957 the Cottrilles, Mr. and Mrs. Arthur Peters, and we found eight singing male Connecticut Warblers, and on 1 July 1960 we found the first Michigan nest. On 2 July 1960 Eliot Porter, Betty Cottrille, and we found a young bird out of a nest some little distance north of the nest that we found the previous day. One specimen was taken.

13. Marquette County, 20 kilometers (12 miles) east of Marquette. We found a singing male on 13 June 1957 in a jack pine, semi-open area.

14. Oscoda County, Red Oak (T28N,R1E, section 26). D. Zimmerman (1955: 12–19) found a singing male Connecticut Warbler on 30 June 1954 and collected another 9 July 1954. D. Middleton, A. J. Berger, and W. P. Nickell (Kenaga, 1960: 37) found a Connecticut Warbler in Oscoda County 18–24 June 1959.

#### MIGRATION AND BEGINNING NESTING

The Connecticut Warbler is a late-spring migrant, usually arriving in southern Michigan late in May. Some birds are observed even into the first few days in June. At Battle Creek, Calhoun County, Walkinshaw has observed singing males on 23 and 27 May 1930, 22 and 23 May 1931, 26 and 27 May 1937, 22, 24, and 26 May 1938, 30 May 1945, 21 May 1946, 4 June 1954 and in Lee Township, Calhoun County, 18 May 1957; in Muskegon County, 29 May 1954 and 31 May 1958. With William Freeman, we observed a singing male near Cross Village, Emmet County on 29 May 1960.

Spring University of Michigan Museum of Zoology specimens indicate a similar trend in migration:

Berrien County (Birchwood Beach) by N. A. Wood 27 May (3 females), 29 May (1 female), 30 May (1 female) 1918.

Kalamazoo County (Kalamazoo) by F. H. Chapin 23 May 1880 (1 male), 28 May 1883 (1 male). (Gull Lake) by C. J. Henry 19 May 1933 (1 male).

Washtenaw County (Ann Arbor) by N. A. Wood 18 May 1911 (1 male); 25 May 1913 (1 male); by A. D. Tinker 3 June 1928 (1 male).

Wayne County (Grosse Ile) by B. H. Swales 5 June 1907 (1 male, 1 female); (Detroit) by D. Middleton 22 May 1950 (1 male).

Iosco County (Hale) by C. Owens 31 May 1954 (1 female).

From the date of the nest that we found in Ontonagon County, Michigan, on 1 July, with young already leaving the nest and young out of another nest the following day, it would appear that egg laying would have begun by 5 June and nest building in late May or early June.

Probably many of the migrating males of late spring in Michigan are going farther north into Canada to breed.

During the spring migration the male Connecticut Warbler often sings rather regularly in the early morning, and it is because of this that we have been able to locate the birds. Often they go along a brush-grown roadside moving northward and singing as they go but usually near the ground.

#### SONG AND SCOLDING NOTES

Much has been written about the Connecticut Warbler's song. It is very loud and penetrating. We feel that it is even louder than the songs of Water-thrushes and the Kirtland Warbler (*Dendroica kirtlandii*). Seton (1884) described the song as *beechee-beechee-beechee-beechee-beechee-beechee* and later as *Fru-chapple fru-chapple fru-chapple whoit*.

One description by us has been *freecherty-freecherty-freecherty-freech*. Again it resembled *Virginia-virginia-virginia* and again a shorter song resembling the song of the Yellowthroat *Weechery-weech*. At McMillan in 1948 we watched two males every morning for some time. Usually they began singing very early in the morning, but on 24 June the first male sang at 0520 and the next morning it was even later, at 0618. On 1 July one male began singing at 0521 while on 3 July one male was singing when we arrived at 0530 and continued to sing until 0607. In 1935 two males were timed at 0500, singing at the rate of six times per minute. We found that males preferred



Figure 1. Female Connecticut Warbler, 1 July 1960, four and one half miles north of Ewen, Ontonagon County, Michigan.

to sing about six-eight meters from the ground in a taller, dense tree and often did not move from that spot for a long period of time. They were even hard to flush at times from their singing perch. Powell Cottrille shook a tree at Ewen in June 1956 while the bird was singing, and it continued to sing regardless.

The scolding note is unique and different than any scolding note we have heard, a sharp *plink*, higher pitched than the call of the Mourning Warbler. Both birds gave this call, and because they were so vociferous we knew where they were nearly all of the time until they ran (not hopped) around close to our feet.

The population of Connecticut Warblers in Michigan has never been sufficiently dense for the development of conspicuous territorial defense. The male that we found at Ewen was singing at least 145 meters from the nest and about 235 meters from the next nearest male Connecticut Warbler. We watched him for some time, when suddenly he flew to the opposite side of the tree, captured an insect, and flew northward between two evergreen trees. When we reached the approximate location, both the pair of Connecticut Warblers and a pair of Mourning Warblers scolded us. Neither paid much attention to the other.

#### NESTING

The above Connecticut Warblers were very vociferous and came regularly with food for the five young. They landed near the nest site, then walked beneath the vegetation for the last 9-15 meters, so that it required some time actually to locate the nest.

The vegetation above and within a meter of it included: Bracken fern (*Pteris aquilina*), a very small basswood (*Tilia americana*), some strawberry (*Fragaria* sp.?), a violet (*Viola* sp.?), morning glory (*Ipomoea* sp.?), goldenrod (*Solidago* sp.?), fireweed (*Epilobium angustifolium*), and large-leaved aster (*Aster* sp.?).

In the vicinity were white pine (*Pinus Strobus*), white spruce (*Picea canadensis*), black spruce (*Picea mariana*), balsam (*Abies balsamea*), cat-tail (*Typha latifolia*), large blue flag (*Iris versicolor*), some willows (*Salix* sp.?), scattered quaking aspens (*Populus tremuloides*), marsh marigold (*Caltha palustris*), goldthread (*Coptis trifolia*), meadowsweet spirea (*Spiraea salicifolia*), shadbush (*Amenlanchier canadensis*), golden avens (*Geum strictum*), red raspberry (*Rubus idaeus*), thimbleberry (*Rubus* sp.?), some clover (*Trifolium* sp.?), sugar maple (*Acer saccharum*), red maple (*Acer rubrum*), red-osier dogwood (*Cornus stolonifera*), black ash (*Fraxinus nigra*), dogbane, self-heal (*Prunella vulgaris*), ironweed (*Veronia altissima*), yarrow (*Achillea* sp.?), and hawkweed (*Hieracium aurantiacum*).

The trees were widely scattered, with many openings between, producing a rather parklike area. The water plants grew along the side of a very small stream. In the majority of clearings, grass, some



Figure 2. Nesting habitat of Connecticut Warbler, north of Ewen, Ontonagon County, Michigan.

timothy, and, in places, some sedges grew. The ground cover was extremely dense.

The nest rested on dry ground. It was very bulky and when collected and dry weighed 19.8 grams. The outside dimensions were 120 x 142 mm. across and 55 mm. deep. Inside it measured 59 mm. across and 52 mm. deep. It was made of a foundation of dead leaves and other dead debris piled into a mass, then lined with coarse grass with finer grass on the interior. Like many birds that build nests in both bog and on dry land, Connecticut Warbler nests vary according to their location. The one described by Huff (1929) was not bulky, and was sunken into sphagnum moss. Nashville Warblers (*Vermivora ruficapilla*) and Palm Warblers (*Dendroica palmarum*) both nest similarly to the Connecticut Warbler—on dry land and in bogs in the sphagnum moss. The Palm Warbler, however, usually builds its nest on top of the moss; the Nashville Warbler in the moss on the side of a hummock. The nest of the Connecticut Warbler is more like the nest of the Palm Warbler than like that of the Nashville.

The juvenal nestling Connecticut Warbler is quite dark on the back, a dark brown with no evidence of any lighter markings at all. There is no eye ring. The sides beneath are lighter brown, becoming yellow below. The throat is buffy. The tomsia are yellow; the inside of the mouth a pinkish-orange. The legs are light-flesh color. Weights of two of the nestlings ready to leave the nest were 10 grams. Wings of four measured, 36, 36, 36, and 35 mm.; tails, 6, 6, 7, and 7 mm.; tarsi, 20, 21, 22, and 22 mm.; culmen 8.2, 8, 8, and 8 mm. The adults were caught and measured. The male weighed 13.5 grams. His wing measured 68 mm.; tail, 54 mm.; tarsus 21 mm.; exposed culmen, 12 mm. The female weighed 13.2 grams. Her wing measured 69 mm.; tail, 51 mm.; tarsus, 20 mm.; exposed culmen, 12 mm.

The average wing measurement of 15 males in the University of Michigan Museum of Zoology was 71.5 mm.; 9 females, 66.8 mm., considerably longer than wings of the Mourning Warbler. In addition to the longer wing the Connecticut Warbler has longer under tail coverts, and adults always have a distinctive white orbital ring. The male is olive-green above, gray without any black on the throat, and yellow below this. The female is browner on the throat but also has the complete eye ring.

#### FALL MIGRATION IN MICHIGAN

There has been some suggestion of possible differences in migratory route in the fall from that of spring. Yet a number of specimens exist

from southern Michigan indicating that many birds must follow the same route as in the spring. The following specimens are in the University of Michigan Museum of Zoology:

Isle Royale by W. G. Fargo 4 Sept. 1924 (1 juv. female).

Chippewa County (Munuscong State Park) by W. G. Fargo 5 Sept. 1927 (1 juv. female).

Saginaw Bay (Charity Island) by N. A. Wood 3 Sept. (1 female), 6 Sept. (1 female), 8 Sept. (1 male), 15 Sept. (1 female) 1910.

Muskegon County (Laketon Twp.) by L. H. Walkinshaw 14 Sept. 1957 (1 male).

Livingston County (Edwin S. George Reserve) by G. M. Sutton, 5 Sept. 1940 (1 juv. female); (Whitmore Lake) by R. E. Stewart 3 Sept. 1938 (1 female).

Jackson County (Portage Lake) by R. E. Stewart, 27 Aug. 1938 (2 females).

Washtenaw County (Ann Arbor) by N. A. Wood, 13 Sept. 1926 (1 male). (Pittsfield Twp.) by A. J. Berger, 7 Sept. 1955 (1 juv. male).

Wayne County (Palmer Park) by B. H. Swales, 8 Oct. 1905 (1 female); 30 Sept. 1906 (1 female).

#### SUMMARY

The Connecticut Warbler has been found in summer from the Peace River Parklands eastward to Rupert House, Quebec, southward to Aitkin County, Minnesota, at Wascott, Douglas County, Wisconsin, and now at Ewen, Ontonagon County, Michigan, and at times even into the Lower Peninsula, at Red Oak, Oscoda County, Michigan. A nest was found in northern Michigan on the ground in an aspen, balsam parkland. It contained five young, all ready to leave the nest on 1 July 1960. They left during the day.

Young birds (probably about 9 or 10 days old) are an olive-brown on the back, without any wing bars and no eye ring. Below, on the sides, they are a lighter brown, the same on the throat, gradually blending to yellow on the lower parts. The tomsia are yellow; the inside of the mouth, pinkish-orange. The legs are light-flesh color.

Food of the young consisted of moths, green larvae, and other insects brought by both parents. Excreta were usually carried away from the nest at this time.

The juvenal Connecticut Warblers weighed 10 grams. Their wings measured 35-36 mm. Adults weighed 13.2 and 13.5 grams. The average wing measurement of 15 males in the University of Michigan Museum of Zoology was 71.5 (69-74) mm.; of 9 females, 66.8 (64-70.5) mm.

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