

# THE YELLOW-HEADED BLACKBIRD IN WISCONSIN

By ROBERT S. ELLARSON

## Introduction

The yellow-headed blackbird, *Xanthocephalus xanthocephalus* (Bonaparte), as a result of its highly localized and limited distribution within the state, and in spite of its deceptive abundance on certain breeding marshes, must be considered one of the lesser known breeding birds of Wisconsin. Over ten per cent of the members of the Wisconsin Society for Ornithology who cooperated in the survey of this species had never seen a yellow-headed blackbird.

In order to better define its range and to investigate the ecology and populations of yellow-headed blackbirds within the state, the Wisconsin Society for Ornithology distributed questionnaires dealing with this species to its members in the fall of 1949. The information obtained from these questionnaires, the cited literature, plus some information obtained by the author while working with a colony of "yellow-heads" near Sun Prairie, Wisconsin, have formed the basis for this paper.

## Historical

Thomas Say first added the yellow-headed blackbird to the North American avifauna while attached to Major Long's expedition to the Rocky Mountains in 1819-1820<sup>16</sup>. Nuttall and Audubon both considered the range of this species to be confined west of the Mississippi River, and it was not until 1850 at which time Thure Kumlien included it in his list of birds that its presence east of the Mississippi was established<sup>17</sup>. During the period 1851 to 1854 Kumlien sent several skins, nests, and eggs to Thomas Brewer who sold them to collectors in the East<sup>18</sup>.

## Distribution

Ridgway gives the range of the yellow-headed blackbird as follows, "Open districts of west and central North America, winters southern United States west of Mississippi and most of Mexico. Breeding east to prairie sloughs of upper Mississippi valley, N. E. Illinois, N. W. Indiana, and S. Wisconsin."<sup>15</sup> This eastward extension of breeding range is highly interesting and helps to shed considerable light on this bird's ecology since this eastward extension follows precisely the eastward extension of the botanical prairie peninsula across the upper Mississippi River. From this one may deduce that this species was confined to breeding almost exclusively in prairie sloughs and marshes before the advent of white settlement. This was probably due to the birds' strong tendency toward feeding on open uplands which under primeval conditions was available only on the treeless prairies or in thinly timbered oak openings bordering the prairie. However, this also raises the still unanswered question of why the yellow-headed blackbird has failed to extend its range appreciably in view of the extensive clearing of forested lands around the eastern periphery of its range.

In plotting the range of this species in Wisconsin it was necessary to carefully screen the numbers and location of colonies listed in the questionnaires to eliminate possible duplications, and if errors are present,

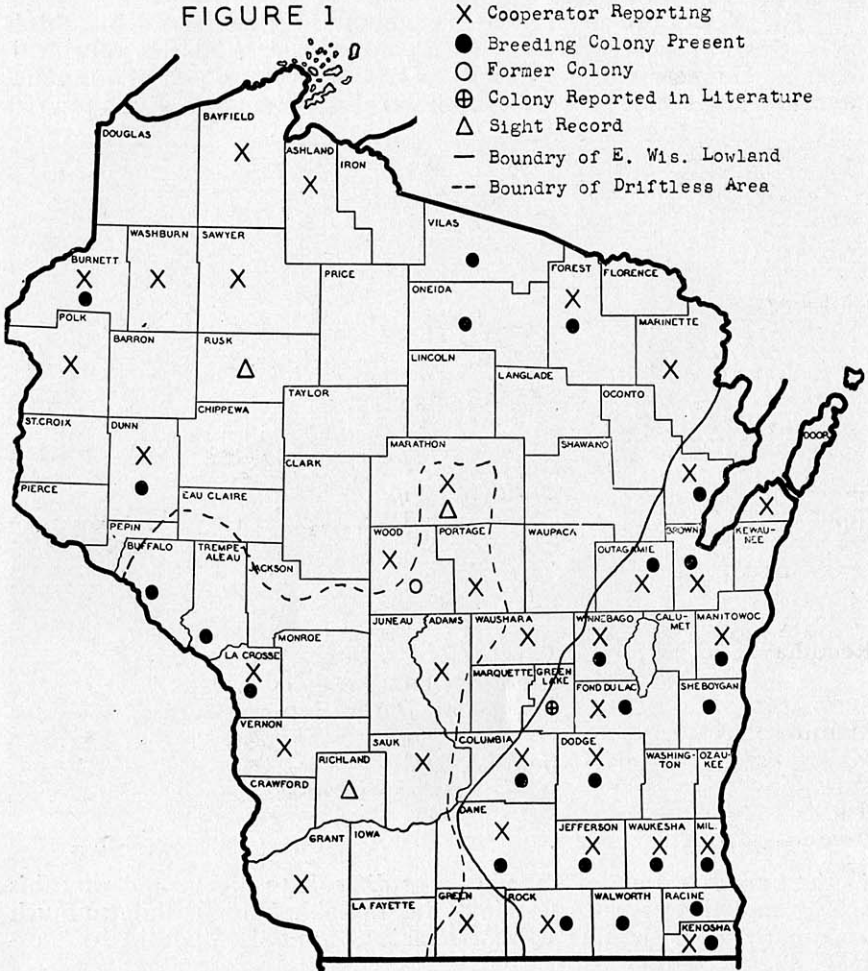
they are most probably errors of omission. The task of evaluating the reports of colonies was further confused by the fact that for nine of the counties from which colonies were reported other observers reporting on the same counties stated that none were to be found there. However, these counties were included within the range as the submitted data seemed to substantiate the presence of breeding colonies.

Table I gives a summary of the counties in which yellow-headed black-bird colonies are found together with the number of colonies, location of colonies (where known), and the number of cooperators reporting colonies for each county.

**TABLE I**

Counties with Yellow-headed Black-bird Colonies	Number of Colonies	LOCATION OF COLONIES	Number of Cooperators Reporting One or More Colonies
Brown	1	Around Green Bay	2
Buffalo	?	Mississippi River Bottom Marsh	1
Burnett	1	Clam Lake 1949, Munson Lake 1948	1
Columbia	1	not given	1
Dane	5	Dunn's Marsh, Duschack's Marsh, Fish Lake, Lake Barney, Marsh on Dr. Baumann's Farm 1 mile east of Lake Monona	5
Dodge	2	Horicon Marsh, Rock River south of Horicon	3
Dunn	1	Lake Menomonie	1
Fond du Lac	2	West Shore Lake Winnebago	3
Forest	?	not given	1+1 in litt. <sup>24</sup>
Green Lake	?	not given	in litt. <sup>8</sup>
Jefferson	4	Rock Lake, Red Cedar Lake, Lake Koshkonong, Storr's Lake	4
Kenosha	4	Camp Lake, Hooker Lake, Montgomery Lake, Wilmot Marsh	4
La Crosse	?	Mississippi River Bottom Marshes	1
Manitowoc	1	near Reedsville and Collins	1
Milwaukee	1	South of Hales Corners	1
Oconto	2-3	near Oconto and Pensaukee	2
Oneida	1	near Tomahawk	2
Outagamie	1	Appleton	in litt. <sup>24</sup>
Racine	1	Wind Lake	1
Rock	4	Davidson's Marsh, Round Lake, Bauer's Lake, Miller's Pond,	6
Sheboygan	1	Sheboygan Marsh	1
Trempeleau	?	River bottom marshes	1
Vilas	?	not given	1
Walworth	1	Lake Como	3
Waukesha	2	Big Muskego Lake, Beaver Dam Marsh	4
Winnebago	5	Lake Butte de Morts, South of Neenah, 2 between Winnebago and Fond du Lac, near Oshkosh	10
Wood	1	not given	2

Figure I shows the distribution of the "yellow-head" colonies in relation to the Eastern Lowland geographical province as defined by Martin<sup>10</sup> and in relation to the driftless area of southwestern Wisconsin. It will be noted from this map that the major breeding range of this bird is concentrated within this eastern lowland area. This distribution is entirely in keeping with what appears to be the preferred habitat of this species.

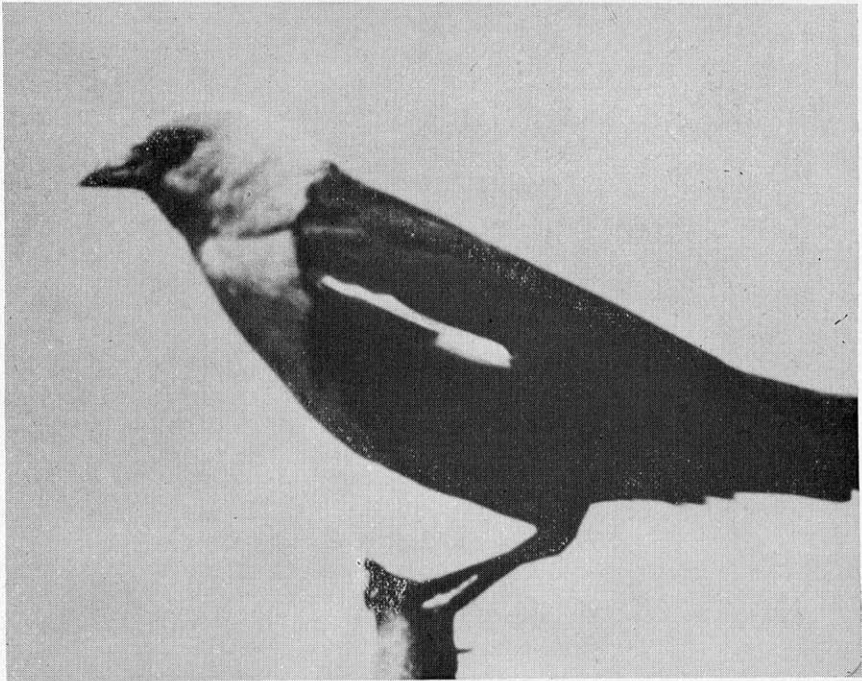


The area is characterized by a level to gently rolling topography with a poorly defined drainage pattern resulting in numerous marshes and shallow weedy lakes which closely approximates the conditions found in the center of the birds' breeding range in the prairie country of the western states.

The driftless area is totally devoid of breeding colonies of yellow-headed blackbirds except for colonies located in the Mississippi bottomland marshes. The absence of the bird from all except this narrow strip is undoubtedly the result of almost a complete lack of suitable marsh

habitat within this area. Mr. Clarence A. Searles and Mr. Wallace B. Grange both reported former colonies from the central Wisconsin sand plain area which is included in the driftless area. Both agree that to their knowledge the bird is not present at this time. Mr. and Mrs. F. N. Hamerstrom, who have done a great deal of field work in this area, have never seen the bird in the central Wisconsin sand plain area, attesting to its great rarity within this region.

The presence of small isolated colonies of yellow-headed blackbirds in northern Wisconsin in typically Canadian zone habitat is difficult to explain. However, it is not unique to Wisconsin since both Macoun and Macoun<sup>10</sup> and Preble<sup>12</sup> record small isolated colonies north of the prairies



ADULT MALE

HOWARD ORIANS

in the Canadian zone of Canada. It is difficult to understand why this species should select such seemingly inhospitable habitat while so much apparently more suitable habitat remains uncolonized within its "normal" range.

The range of the bird within the state appears to be relatively stable except for the isolated colonies in the north and the colonies in Manitowoc and Sheboygan counties which appear to be recent extensions of the birds' range.

#### **Migration**

The yellow-headed blackbird migrates in sexually differentiated flocks. The adult males arrive two to three weeks ahead of the females.

An average of 25 arrival dates for Wisconsin<sup>24</sup> <sup>25</sup> ranging from March 30 to May 10 show the average arrival date to be April 23. There are in-

sufficient data available to attempt to plot average arrival dates at various latitudes in Wisconsin, but data from Iowa and Minnesota tend to indicate that our average arrival date is from one to two weeks behind their average dates<sup>13-16</sup>. The yellow-headed blackbird wanders very little during its spring migration, flying directly to its breeding marsh<sup>2-16</sup>. This habit coupled with the restricted breeding range of the species in Wisconsin undoubtedly results in the scarcity of early spring arrival dates, for if an observer does not have a breeding marsh under close observation the first arrival date will most certainly be missed. During the past three years the author's first arrival dates for Dane County have been as follows: 1948—April 14; 1949—April 2; 1950—April 17. The average of these three dates (April 11) is intermediate between the average date for northern Iowa (April 5)<sup>13</sup>, and the average date for southern Minnesota (April 16)<sup>16</sup>. This earlier date does seem to be more in keeping with the Iowa and Minnesota averages than the average based on the 25 dates. The author's first arrival dates are based on one or two birds at most, the bulk of the breeding males arriving a week to ten days later.

### Breeding

The question of what constitutes suitable breeding habitat for "yellow-heads" is a perplexing one. The one factor on which there appears to be complete agreement is that the nest must be constructed over open water. The type of vegetation in which the nest is constructed seems to be of lesser importance. Fautin<sup>3</sup> in Utah found the birds nesting in shrubs (*Salix* sp. and *Tamarix gallica*), Roberts<sup>17</sup> lists *Phragmites* as the preferred nesting site except when high waters forced the birds into *Salix* and *Scirpus*, while Macoun and Macoun<sup>10</sup> found *Typha latifolia* to be preferred in Canada with some nests also being found in *Scirpus*. For Wisconsin the following list of plants in which "yellow-head" nests were found was compiled from the questionnaires.

#### PLANTS

#### Cooperators Reporting

Cattail ( <i>Typha</i> sp.) .....	17
Bulrush and Roundstem Bulrush ( <i>Scirpus</i> sp.) .....	7
Reeds ( <i>Phragmites</i> )? .....	4
Grasses and Tall Grasses* .....	3
<i>Phragmites</i> .....	1
Cane Grass ( <i>Phragmites</i> )? .....	1
Burreed ( <i>Sparganium</i> ) .....	1

\*The author doubts if "yellow-heads" in Wisconsin ever nest in grasses other than *Phragmites*.

The average size of 20 marshes reported as breeding areas in Wisconsin is approximately 55 acres, with a range from 3 to 200+ acres. The "yellow-head" does appear to prefer nesting in larger marshes or in marshes bordering lake shores or rivers but this may be due largely to more favorable water conditions existing in these larger marshy areas.

One important clue to the birds' habitat preference was supplied by Harold Mathiak and Robert Dorney, who reported a remarkable increase in yellow-headed blackbirds on Horicon marsh during the past year (1949-1950). This increase seems to be correlated with an increasing water depth that has resulted in what Mr. Mathiak considers to be a more favorable interspersed of open water and "cattail islands," thereby breaking up the solid stands of cattail which seem to be less desirable as nesting cover.

The following list of birds found breeding in the same marshes with yellow-headed blackbirds was compiled from the Wisconsin questionnaires.

Species	Number Reporting	Species	Number Reporting
Red-winged Blackbird .....	25	Blue-winged Teal .....	4
Florida Gallinule .....	19	Pied-billed Grebe .....	3
American Coot .....	12	American Bittern .....	1
Black Tern .....	12	Great Blue Heron .....	1
Marsh Wren (both species) ..	10	Black-crowned Night Heron	1
Least Bittern .....	8	Ruddy Duck .....	1
Mallard .....	8	Red-breasted Merganser .....	1
Sora .....	6	Tree Swallow .....	1
Virginia Rail .....	6	Swamp Sparrow .....	1

To anyone familiar with marsh bird life this list of breeding birds will furnish a far more graphic description of the type of marsh preferred by "yellow-heads" than any description the author could give.

The yellow-headed blackbird male does not breed until his second year and the species is polygamous.<sup>3</sup> Fautin<sup>3</sup> in Utah found that breeding males had harems of from two to four females. Male territories appear to be well established before the females arrive on the breeding marshes.

The nest building is done solely by the female. The early first nests are always constructed in last year's dead plant remains as the new green growth is seldom high enough to be of any value as a nest support. The nest is constructed of wet plant remains woven around several stalks of stiff erect vegetation. As the nest material dries it shrinks and is firmly bound to the supporting stalks. It is lined with rather coarse shreds of cattail leaves and stalks or **Phragmites** leaves. Nests are usually constructed 12 to 36 inches above the water level. "Yellow-head" nests appear to be of two general shapes, a more or less hemispherical nest five to seven inches long, and an inverted cone shaped nest 8 to 10 inches long. All of over 200 nests examined by the author and which were constructed in cattail were of this first type, while a single nest built in bulrush was of the latter type. Roberts<sup>17</sup> found the long conical type the one used by the birds when building in **Phragmites**. It would appear from this evidence that the shallower nest form is used by the birds when building on a relatively rigid substrate such as dead cattail stalks, and that the longer nest form is used when building in less rigid and more willowy substrates such as offered by bulrushes and **Phragmites**, the longer nest giving greater rigidity to the more slender stalks. Virtually no data are available as to the time of nest construction in Wisconsin, but since it usually begins within a week after the females arrive on the marsh, the first two weeks of May would include most of the nest construction activity. Clutches vary from two to six eggs with four the usual size. Early clutches or first nesting attempts tend to have larger numbers of eggs than later or second nesting attempts<sup>13</sup>. The female does all of the incubating, and incubation time varies from 12 to 13 days<sup>3</sup>. Allowing 4 days to complete a clutch with incubation beginning on the day the second or third egg is laid<sup>3</sup>, would place the average hatching date for Wisconsin sometime in the first week of June. This date corresponds very well with the author's observations as it was found that the bulk of the young on the Sun

Prairie Marsh are fledged during the second and third week of June which allows for a 9 to 11 day nestling period. After the young are fledged they remain in the marsh for about two weeks, after which time they leave and are seldom seen again in the vicinity of the breeding marsh.

Some breeding activity continues and young may be found in the nest up to the first week of July. These late broods undoubtedly represent re-nesting attempts. By mid-July the "yellow-head" marshes are deserted and the birds wander around the countryside in loose flocks. It is during this period of the birds' stay in Wisconsin that virtually nothing seems to be known of its movements or habits. The adult males by this time have lost most of their gaudy yellow feathers which are replaced by their rich deep golden winter plumage. The average departure date is



THE NEST

HOWARD ORIANI

FEMALE IS PARTLY OBSCURED BY SHADOWS

given by Schorger as August 19,<sup>20</sup> although stragglers have been noted as late as October 28.<sup>24</sup>

The birds winter in the southern United States west of the Mississippi River down into Mexico and Central America. Throughout its winter range it roams about in flocks leading a sort of cowbird-like existence.<sup>16</sup>

Only one winter record for this species is available from Wisconsin. A yellow-headed blackbird was reported seen by S. H. Richards near New Glarus, Wisconsin, on February 15, 1947.<sup>25</sup>

### Populations

There is no information available regarding population trends for the yellow-headed blackbird in Wisconsin before the turn of the century. In 1903, Kumlien and Hollister in **The Birds of Wisconsin** remarked

that the yellow-headed blackbirds appeared to be increasing,<sup>7</sup> and A. J. Schoenebeck found the bird a common breeder in Oconto County.<sup>18</sup> Mrs. Angie Kumlien Main found the birds very numerous around Lake Koshkonong, so numerous in fact, that in 1916 a nearby cornfield had to be replanted due to the birds pulling up the sprouted corn. Following this high a decline was noted continuing to 1923 which she attributes to falling water levels in Lake Koshkonong.<sup>9</sup> Mr. J. B. Kendall in his questionnaire reported: "The yellow-head used to be very abundant from 1911 to about 1917 in this area [Green Bay]. After many years of seeing none they seem to be returning in considerable numbers." H. L. Stoddard reported seeing yellow-headed blackbirds in the 1920's on Big Muskego Lake in Waukesha County in greater numbers than he had ever seen them before.<sup>21</sup> On this same marsh Mr. P. W. Hoffmann of Oconomowoc found a very marked decline in birds from 1935, when an extensive colony was still present, up to 1945, at which time the colony was reduced to almost nothing. Lillian Marsh reports that a colony that she has observed on Lake Winnebago between Oshkosh and Neenah four years ago had about 100 birds in it; each succeeding year the colony has dwindled until in 1949 no more than seven or eight birds were sighted during three visits to the marsh.

C. J. Richter in his additions and comments to A. J. Schoenebeck's **Birds of Oconto County**, states that the birds can hardly be called common, being found only in marshes along the Green Bay shore and never in any numbers.<sup>14</sup> In contrast to these reports of declining numbers are several most encouraging reports of population increases observed in recent years by members submitting questionnaires. Mrs. Lyell Porter reports that a marsh two miles west of Edgerton which had dried up and lost its "yellow-head" colony during the drought years has now recovered, and the birds are very much on the increase; Ray Steele states that the Mississippi River bottom colonies have at least doubled in number; C. J. Skelly believes there are more birds in each of three colonies around Milton (Jefferson County); the Davidson colony having tripled in size. Harold Mathiak reported an increase in 1949 over previous years for the birds on Horicon marsh, while Robert Dorney reports a phenomenal increase of from 75% to 100% for the same area from 1949 to 1950. He estimated the breeding population of Horicon marsh in the vicinity of 500 pairs occupying roughly 1,000 acres of suitable habitat. In addition to these notes the May Field Notes for the 1939 and 1940 **Passenger Pigeon** indicate a greater abundance of "yellow-heads" seen during these two years.

In general, the above information gives one the impression that the birds were on the increase during the first two decades of the twentieth century, then suffered a decline during the 1920's, culminating in the drought of 1930's, and since that time have been staging a comeback. This analysis is without doubt an oversimplification since within the past decade certain marshes have shown declines and others good increases. The entire population picture is a dynamic one which, with the incomplete data available, can scarcely be brought into focus to say nothing of analyzing it.

The yellow-headed blackbird is a thinly distributed species at the periphery of its range in Wisconsin. On such a species environmental



factors and influences are apt to have drastic effects on the total population. Severe drought or drainage may eliminate many colonies through a drying up of nesting marshes. Predation by mink or other mammalian predators can eliminate the entire year's crop of young from a breeding colony by methodically robbing nests,<sup>17</sup> while severe wind and rain storms can account for a large number of active nests in a colony.<sup>3</sup> Nests were also listed as being destroyed in Wisconsin by the following agencies: flooding when off shore wind raises water levels in Green Bay, eggs punctured by marsh wrens, and eggs being destroyed by least bitterns.

## SUMMARY

The yellow-headed blackbird has a highly localized distribution in Wisconsin with the largest number of breeding colonies concentrated in the southeastern portion of the state. The average arrival date in Wisconsin appears to fall within the second week of April. Females arrive about May 1, and the period of greatest nesting activity occurs during the last two weeks of May and the first two weeks of June. By mid-July the birds have largely disappeared from the marshes and wander about the country in loose flocks. The average departure date for Wisconsin is August 19.

The population fluctuations of this species cannot be satisfactorily analyzed due to insufficient available data. At the present time, however, the birds seem to be increasing on most breeding marshes, although a few marshes have shown a marked decrease in birds.

Several interesting problems present themselves to be worked on regarding the yellow-headed blackbird in Wisconsin, the most important of these being to work out an accurate census of this species for the state. This should not be as great a task as it sounds since the bird can very easily be censused by counting singing males on a marsh during the last two weeks of May, during which time they are highly territorial and very much in evidence. Succeeding years' data from such a census would give a very accurate picture of population trends within the state. Secondly, get information on the small colonies in northern Wisconsin, and try to determine the habitat preferences for the bird in this area so that they may be compared with the habitat in southern Wisconsin. Thirdly, watch for records of movement or any activity during the period after the birds have left the breeding marsh and before they migrate in the fall. Fourthly, attempt to determine where first-year male birds spend their summers as they are never in evidence around breeding marshes and in conjunction with this, try to determine if females breed at one year of age.

## BIBLIOGRAPHY

1. Cahn, A. R. 1913. The birds of Waukesha County. Wis. Nat. Hist. Soc., 11(4): 113-149.
2. Cooke, W. W. 1888. Report on bird migration in the Mississippi Valley in the years 1884-85. U.S.D.A. Div. of Econ. Ornith. Bull. No. 2, pp.162-163.
3. Fautin, Reed W. 1941. Incubation studies of the yellow-headed blackbird. Wilson Bull., 53(2):107-122.
4. Grundtvig, F.L. 1895. On the Birds of Shiocton in Bovina, Outagamie County, Wisconsin 1881-83. Trans. Wis. Acad. Sci., Arts and Letters, 10:72-158.
5. Jackson, H. H. T. 1927. Notes on the summer birds of Door County, Wisconsin and adjacent islands. Trans. Wis. Acad. of Sci., Arts, and Letters, 23:639-666.
6. ———. 1941. The summer birds of northwestern Wisconsin. Passenger Pigeon, 3(10,11,12):87-90,95-98,103-106.

7. Kumlien, L. and N. Hollister. 1903. The birds of Wisconsin. Bull. Wis. Nat. Hist. Soc., 3(1,2,3):87.
8. Lowe, John N. 1915. The birds of Green Lake County, Wisconsin. Bull. Wis. Nat. Hist. Soc., 13(2):62-87.
9. Main, Angie Kumlien. 1927. The yellow-headed blackbird at Lake Koshkonong and vicinity. Trans. Wis. Acad. of Sci., Arts and Letters, 23:631-638.
10. Macoun, John and James M. Macoun. 1909. Catalogue of Canadian birds. Govt. Printing Bureau, Ottawa, pp.426-428.
11. Martin, Lawrence. 1932. The physical geography of Wisconsin. Wis. Geol. and Nat. Hist. Surv. Bull. No. 36, Educ. Series 4, pp.209-233.
12. Preble, Edward A. 1908. A biological investigation of the Athabaska-Mackenzie region. N. Amer. Fauna No. 27, p.408.
13. Provost, M. W. 1947. The nesting of birds in the marshes of northwest Iowa. The Amer. Midland Nat., 38(2):485-503.
14. Richter, Carl H. 1939. Additions and comments to A. J. Schoenebeck's Birds of Oconto County. Passenger Pigeon, 1(9):124-129.
15. Ridgway, R. 1902. The birds of North and Middle America. Bull. of U. S. Natl. Mus., No. 50, pp.347-350.
16. Roberts, T. S. 1932. The birds of Minnesota. Univ. of Minn. Press. Vol. II, pp.294-300.
17. Roberts, Thomas S. 1909. A study of a breeding colony of yellow-headed blackbirds; including an account of the destruction of the entire progeny of the colony by some unknown natural agency. Auk, 26:371-389.
18. Schoenebeck, A. J. 1939. The birds of Oconto County. Passenger Pigeon, 1(7):95-105.
19. Schorger, A. W. 1946. Thure Kumlien. Passenger Pigeon, 8(2):53.
20. ————. 1931. The birds of Dane County, Wisconsin. Part II. Trans. Wis. Acad. of Sci., Arts and Letters, 26:36-37.
21. Stoddard, H. L. Reminiscences of Wisconsin birding. Passenger Pigeon, 9(4):123-129.
22. Van Tyne, J. 1938. Check list of the birds of Michigan. Occasional Papers of the Mus. of Zool., Univ. of Mich., No. 379.
23. Whitson, A. R. 1927. Soils of Wisconsin. Wis. Geol. and Nat. Hist. Survey, Bull. 68, Soil Series 49.
24. Field Notes: Passenger Pigeon, 1939-1950, inclusive.
25. Field Notes: Kumlien Club, 1935-1950.

#### LIST OF CONTRIBUTORS

Contributor	Counties Reported On
1. Mrs. V. A. Axeley .....	Bayfield
2. Mrs. L. M. Babcock .....	Rock
3. George S. Bachay .....	Rock
4. Robert A. Bailey .....	Washburn
5. Bernard Bradle .....	Forest
6. Mrs. Harold Brown .....	Outagamie, Winnebago, Dane
7. Alfred S. Bradford .....	Outagamie, Winnebago, Fond du Lac
8. Mrs. Alvin C. Bromm .....	Milwaukee
9. Marie Barlow Backman .....	Oconto, Forest, Oneida, Vilas
10. Edwin R. Cleary .....	Brown
11. Robert S. Dorney .....	Dodge
12. Ann Dunham (Milw. Downer Coll.) ..	Waukesha, Dane, Winnebago, Racine
13. John T. Emlen .....	Dane
14. J. H. Evans .....	Winnebago
15. Mrs. Glen Fisher .....	Winnebago
16. Mrs. T. A. Froedrich .....	Ashland
17. Mabelle F. Gates .....	Wood
18. Paul C. Gatterdam, M. D. ....	La Crosse
19. Richard J. Gordon .....	Oneida, Kenosha
20. Wallace B. Grange .....	Wood
21. Mrs. F. N. Hamerstrom .....	Waukesha, Portage, Adams
22. Felix A. Hartmeister .....	Burnett
23. L. Heinsohn .....	Polk
24. Paul W. Hoffmann .....	Waukesha
25. Mrs. Howard Higgins .....	Kenosha, Milwaukee
26. Laurence R. Jahn .....	Jefferson
27. Karl W. Kahmann .....	Sawyer
28. Josephine B. Kelley .....	Waukesha

Contributor	Counties Reported On
29. J. B. Kendall .....	Brown
30. Frank King .....	Manitowoc, Sheboygan, Winnebago, Outagamie
31. J. Kroupa .....	Manitowoc, Dane
32. Harold Kruse .....	Sauk, Dane
33. Mason, S. Le Tellier, M. D. ....	Milwaukee, Walworth, Waukesha
34. Mattison, Helmer .....	Dunn
35. Phillip Marlow .....	Dodge, Dane, Jefferson
36. Lillian Marsh .....	Manitowoc, Winnebago
37. Harold Mathiak .....	Dodge
38. Margarette E. Morse .....	Vernon, Walworth
39. Mrs. R. A. Mullenise .....	Wood
40. Donna Nelson .....	Kenosha
41. Ethel Allis Nott .....	Sauk, Columbia
42. Joseph O'Hara .....	Jefferson
43. H. C. and Gordon Orians .....	Waukesha, Green
44. Edna M. Peebles .....	Winnebago, Fond du Lac
45. Mrs. Lyell Porter .....	Jefferson
46. Miss Alma Prucha .....	Milwaukee
47. Myron Reichwaldt .....	Manitowoc
48. C. H. Richter .....	Oconto
49. George Ruegger .....	Sawyer, Winnebago
50. Walter E. Scott .....	Dane, Jefferson
51. C. A. Searles .....	Wood
52. C. J. Skelly .....	Jefferson
53. Ray C. Steele .....	Trempealeau, Buffalo, La Crosse
54. Norman R. Stone .....	Burnett
55. Landon B. Thomas .....	Dane, Rock
56. Alvin L. Throne .....	Milwaukee, Winnebago, Waukesha
57. Mrs. Floyd Traxler .....	Jefferson
58. William Urban .....	Marathon
59. Howard L. Van Ness .....	Columbia
60. Russel O. Wagner .....	Grant
61. Harold C. Wilson .....	Door, Winnebago
62. Carl Welty .....	Walworth, Rock
63. R. J. Laumeyer .....	Winnebago

Department of Wildlife Management  
University of Wisconsin

## OUTDOOR CALENDAR: AUTUMN

By JAMES H. ZIMMERMAN

If Thoreau could have been set down in the wilderness in his vicinity without knowing the season, he would have been able to estimate the date to within a week, so familiar was he with the happenings through the year among the plants, birds and other wildlife. It is here proposed that we could profitably reverse this sequence; that instead of using such an enviable intimacy with nature as a calendar, we let the orderliness of natural events help us become more proficient naturalists. For when one keeps track of the dates of a few conspicuous happenings—arrival of nighthawk, blooming of basswood, or rhythmic song of first tree cricket for a few years, he is struck not only by the accuracy of their timing, but also by the vastness of the biological drama which goes on, largely unheeded, on every hand. After he has made himself watch for certain specific phenomena, he begins to notice many other sights and sounds—"new" and "strange" details in the drama which were there all the time but which he could not untangle from each other until he could pick out a few that were familiar.

The aim of this department, then, is not to present a chronology as an end in itself, interesting as this may be, but rather to increase our awareness of the complex background of sights and sounds that is our environment to increase our alertness for the unknown by presenting a time-table of what little has been observed as a framework on which to build knowledge. It is hoped that field trips can be made more interesting by an exchange of such information through these pages.