

# THE FLICKER

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## The Flicker

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# THE FLICKER

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## Do Birds Like Music?

*By* Thelma Sneed

"Everyone laughed when I sat down at the piano, but ....."!

Everytime I start to play I think of this advertisement because it seems applicable to me. Different indications of displeasure usually resulted in my case, such as: hands clasped firmly over ears, a groan, or some such explosions as "stop that infernal noise!" or "find some other time to practice!" This resulted in a very definite slackening in my playing. I probably will never be a good player since my hands and fingers are too small to reach an octave comfortably. However, I still thoroughly enjoy playing occasionally even if only for my own amusement, or often times for my own discouragement.

On July 4, 1943, the family was spending a weekend at our summer home at Woman Lake, Minnesota. This clear blue lake with its sandy bottom is located near Walker in the north central part of the state. Since both deciduous and evergreen trees grow abundantly here, the flora and fauna which commonly appear with both types of habitats are present. This area, we think, is a paradise for birds and other animals, plants, sports, rest from work, and other diversions which make life worth living. So, naturally, we spend as much time here as possible.

On this particular Fourth of July, the weather was warm and sunny. In order to enjoy its delightfulness, we were all sitting out on the front porch. There wasn't much wind, and all the windows were opened so that every little breath of fresh air could circulate freely through the whole house. Since I hadn't played the piano for a long time and because of the quiet lull, I felt in the mood to practice; so I went inside and took out a favorite piano album. Some selections from this, such as, "La Paloma", "The Shepard's Boy", and "Black Hawk Waltz", I can play with just a few hesitations; but the rest sound really difficult the way I perform them. Therefore, to bolster my courage, I usually start with "La Paloma" and play that until I reach the last difficult page.

On this occasion I enjoyed playing as I never have before! When I had half finished "La Paloma", I heard the most beautiful obbligato issuing from outside the window near the piano. From what I could surmise, a gathering of at least 15 to 20 yellow warblers which had been attracted by the "music" had joined in, in concert. I was thrilled and excited; so in order not to discourage them, I omitted that last page and turned quickly to "The Shep-

herd's Boy". Its pretty lilt caught their fancy, and soon the group was warbling like the tame canaries that can be heard over the radio on Sunday afternoons.

The technique of these yellow warblers appeared to be the same as that of the tame canaries. Sometimes they acted like sheep, waiting for one to begin, and then following the leader. More often, though, each acted as a virtuoso and created his own variations. Even with such a diversity of melodies there were few discordant sounds. Accordingly, no matter how fancy an individual bird wished to become he usually kept in harmony and in tune with the piano and his fellow warblers. So it was—as long as I played right along (with not too many mistakes) my obligato continued beautifully.

When I had finished these first two pieces, I tried "Black Hawk Waltz". It proved to be too fast for them, and the majority of the birds stopped warbling. Apparently some time was required for them to figure out the trend of the melodies so that they could catch their cues as to what notes on which they should base their harmonies. It didn't seem possible for them to accomplish this during a fast moving melody although some of them still succeeded. When I realized their difficulty, I stopped trying to interest them in harmonizing to the few faster pieces that I knew and skipped over to their preferred slow, dreamy ones such as "Warblings at Eve", "The Flower Song", and others. These slower selections suited me better too. (By now you should be able to guess why!)

Everything was all right until I would "upset the applecart" with my poor playing. Sometimes they followed the piano so faithfully that they were led astray by my discords. I felt terribly distressed when this happened because when I managed to get back

on the correct melody, they were warbling beautifully — with gusto — even though we weren't in accord. At the same time, however, I had to laugh because they were so easily led astray and would warble so confidently only to sense eventually that everything was wrong, stop, and then listen for a few seconds before they could get their cue to continue the concert.

Often times they attempted to anticipate my next phrase. By the laws of harmony their reckoning was usually correct—but, oh, my! Another of those awful discords! Dismayed, they were obliged to wait for me to find the correct chords before they could begin again although, amusingly enough some of the group became overly ambitious and warbled ahead of my playing. In so doing they wandered off the tune and missed their next notes. However, they immediately sensed that something was wrong because the resulting discords disappeared almost as soon as they were produced. In either of the two above cases it was fun to hear them hustle to get back to the correct harmony.

There may be some controversy as to whether the yellow warblers could actually hear sounds that ranged below two octaves above middle "C". I have not been able to find any reference to research work conducted on the hearing range of these particular warblers. However, there is no doubt in my mind that they actually heard the majority of the notes that I played on the piano even though the melody portion of my repertoire of pieces ranged predominantly from middle "C" to two and a half octaves above middle "C".

It might be suggested that other factors entered into the picture, but I don't see how it could be possible in this case. I remember that I tried to get a glimpse of the warblers in the trees nearby, as I played. However, I

didn't see any except a couple that flitted quickly by the window. Consequently, since I couldn't see them, they probably couldn't see me either. There was, then, apparently nothing to give the birds their cues except the actual sounds that they heard from the piano. The fact that they warbled the exact notes and harmonized even to the extent of being led astray by discords or incorrect melodies also supports the idea that they really heard what was being played.

In addition, if they could only have heard sounds over two octaves above middle "C", then they should have responded very well to "Black Hawk Waltz"; most of the beginning of this piece is pitched above that range. Yet, they didn't care for this selection even though I can play it as well as any of the others. Seemingly, they responded much better to the lower pitched, slower melodies. They always chimed in on those selections when they felt reasonably assured that I would continue playing sufficiently long enough for them to harmonize. Accordingly, I did not discourage the warblers too much by what I played, and my family and I

enjoyed more than an hour's concert.

It is of interest that this performance was not an accidental occurrence. At first I thought so. Then, I recalled former times when I had played my flute while at the lake, and at about the same time of year as the above incident took place. A few yellow warblers had then tried to follow these flute melodies which also ranged between middle "C" and two and a half octaves above middle "C". I recalled, too, that just for fun I tried to imitate the notes that they were trilling, and I did learn something of their songs, although their ability to follow my playing did not seem very spectacular to me then.

So—for my own satisfaction, I tried playing the piano again on my next visit to the lake, which was in the last week of July. I had some success. Apparently, this time there were not so many birds in the singing mood, or, maybe there just weren't many present. At any rate, there was an obligato forthcoming, but it was by far inferior to the one sung by the warblers earlier in July. Robbinsdale, Minn.

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**Editor's Note:** The above report on the ability of yellow warblers to discriminate between musical notes aroused considerable discussion among those of the editorial staff, and some skepticism was registered regarding it. The appearance of the article at this season, it is hoped, will stimulate others, who may have musical ability, to carry out some similar experiments with this or other species and to report on the conclusions reached.

W. J. B.



# Birds At "The Brackens"

By W. J. Breckenridge

Those of our friends who told us we would regret leaving Minneapolis and building out five miles beyond the city limits belonged to that group who did not enjoy birds as we do. In spite of their warnings we now live at "The Brackens" on the banks of the Mississippi north of the city and are having a grand time getting acquainted with the birds of our little three acre woods.

As we look back over 1943, each season seems to have had one or two outstanding bird events. That bleak inhospitable period following New Years when Minnesota birdlife is at its lowest ebb, we were watching the daily movements of a large flock of American golden-eye ducks which seemed to be living a well regulated life on the river. Turbulant unfrozen stretches persist in the Mississippi even during the coldest winters, and, in the more secluded of these open spots, these hardy divers fed during the day. Then toward evening they took wing and in groups of a dozen up to 50 or 60 went whistling down stream to pass the night near a small island in north Minneapolis. The waning light gave the signal for their evening departure, and night after night we would spot them winging south while we were eating our evening meal. In fact, so regularly did they move that we were able to predict within a few minutes when the flocks would pass. These hardy winter visitors, when the mercury slid far below the zero mark, could be found paddling gayly about or resting on the edge of the ice while we shivered and felt like crowding closer around our fireplace.

Another winter caller which stood out in interest above the normal run of winter birds that patronized our feeders was the big, gaudy pileated woodpecker. This striking visitor put in an appearance just often enough for us to know that he really belonged to our area but infrequently enough for his appearance to cause a stir in the household. We have carefully left our dead trees undisturbed for the special benefit of the woodpeckers, and we felt that this really paid a good dividend when "our" big pileated came in with his loose, flapping flight flashing his white underwing patches to alight sometimes within only a few yards of the house. He was an industrious fellow, and we found that often he would work on a single excavation in some dead trunk for as much as 10 or 15 minutes without leaving. He thus occasionally gave us an excellent chance to observe the slow and deliberate, yet powerful chiseling action of his big bill. In a nearby woods, a year ago, he cut a cavity six inches wide, six inches deep, and two feet long in a dead basswood trunk, causing it to topple over a few days later. The wood borers must have been abundant there to induce him to cut such a huge cavity.

One morning about the middle of April, while at the breakfast table, we saw a pair of woodducks alight on the gnarled limbs of an oak only 25 yards from the window. We waited breathlessly with our eyes literally glued to the birds in order not to miss their next move. You may well imagine our delighted surprise when the female flew

over and entered a cavity in a nearby basswood. The tree leaned out over the steeply sloping wooded river bank, and the hole was probably between 25 and 30 feet from the ground directly beneath. There she remained for 10 or 15 minutes, presumably the time required for depositing an egg. She then flew out, and the male, that had been quietly waiting, joined her and off they flew down the river. This occurred several times on successive mornings. Not wanting to jeopardize our chances of having them nest right in our front yard, we did not investigate the nest until May 19, when there were 13 eggs. On May 29, the female refused to leave the nest until I had climbed to within a few feet of the nest hole. Then on June 2, the nest was empty. No evidence could be found that any predator had destroyed the eggs nor were there any shells remaining in or about the tree. Since these ducks are known to carry away the shells from the nest in at least 50 per cent of the cases on record, we feel fairly well assured that they completed their nesting successfully. Perhaps next year, by more careful checking, we will be fortunate enough to see the little ducklings jump from the nest cavity and tumble down the bank to the river.

Of the fourteen species whose nests we found in our woods, a pair of yellow warblers had a particularly hurried time rearing a family. Their nearly completed nest was found in the woods near the bee hives on May 25. Two days later there were two cowbird eggs in the nest. On May 29, I was a bit puzzled when only one cowbird egg was present, but I noticed the nest appeared a little larger. Upon investigating I found the original two eggs built into the nest and here was a third unwelcome egg. On June 1, this was in turn buried, and two days later the first warbler eggs appeared. On June 6, four

were present, the outwitted cowbirds having finally given up. On the 18th the young were hatching, and they succeeded in leaving the nest the latter part of the following week.

The bluebirds nesting in our box near the screen porch were continually pestered by a pair of crested flycatchers. In fact, two broken bluebird eggs on the ground were credited to mischief by these birds. The other three eggs hatched, however, and the young matured. The very day they left the nest the flycatchers moved in and immediately set up housekeeping. Among their additions to the interior furnishings was the well known snake skin. Here they succeeded in rearing a family of three from a set of eggs. We were interested to notice that these birds, so noisy about their feeding grounds, were perfectly quiet about the nesting box.

On April 16, the appearance of a single red-bellied woodpecker caused a stir in the family. It remained several days, and we had hopes that a second one would appear and they might nest. It finally disappeared, however, but this fall it (presumably the same bird) reappeared. I had already erected and supplied my winter feeders, and we succeeded in inducing it to choose our woods as its wintering area. All the rest of the fall and so far this winter (January 15) it has come a dozen times a day and has added much to the interest in our winter feeders.

It was Mrs. Breckenridge's good fortune to record our most exciting observation for the year. She and our two youngsters were eating lunch in our breakfast nook bay on December 6, when she suddenly exclaimed and nearly swallowed a spoon when nothing less than an adult bald eagle came gliding along and alighted for a few minutes in the big oak on the river bank only 75 feet from the window! What a fitting record to conclude our year's bird list

of exactly 100 species seen in our little woods. Just such thrills constitute one big reason of several that make us more than pleased that we did not heed

the warnings of our non-ornithological friends and build in town. *Minnesota Museum of Natural History, Minneapolis.*



## ***Conservation Department Bulletins Available***

*The following publications may be had free of charge by writing The Minnesota Department of Conservation, Bureau of Information, State Office Building, St. Paul 1, Minnesota.*

*"Minnesota Waterfowl", Conservation Bulletin No. 1, 31 pages, By Gustav Swanson, Associate Professor of Economic Zoology, University of Minnesota.*

*"Reptiles of Minnesota", Conservation Bulletin No. 3, 24 pages, by W. J. Breckenridge, Curator, Minnesota Museum of Natural History.*

*"The Farmer Tackles Conservation", Conservation Bulletin No. 4, 23 pages. Articles by Gustav Swanson, Warren W. Chase, Richard J. Dorer, Parker Anderson, and W. J. Breckenridge.*

# Birding On Christmas Week In Louisiana

By Ellen Wilson

A seven-day stay in Louisiana during the Christmas season gave promise of rare opportunities to observe some of our Minnesota birds in their winter home. But promises do not always materialize into reality. Looking back I am compelled to admit, with reluctance, that my bird observations were often incidental to other activities. And so, this pseudo-ornithologist writes an account of that week with humility and regret for lost opportunities.

My first afternoon there, one of sunshine and warmth, sent hopes soaring. "Ah, this is the life!" I thought. "To be in the sunny South far from Minnesota's cold and snow. Tomorrow I may even return with a sunburn after hours of bird watching." Little did I realize that Louisiana was just showing off that afternoon—that tomorrow and the tomorrow after that would bring cold winds and rain. In fact, that was the only sunny day out of seven spent in our "fair" southland.

Clouds and rain pursued me the length of the state even into the magic and mystery of New Orleans. There, on Christmas Day, were roses in bloom, palm trees and poinsettias, quaint and historic buildings, hidden courtyards, lush lawns, Spanish moss—but nary a boat-tailed grackle. The only birds not taking shelter from the rain and stiff winds seemed to be the ring-billed and herring gulls circling gracefully above the river boats.

A Christmas bird count of two species is discouraging, to say the least! But hopes mounted on the return trip when, from the train window, I glimpsed three evil-looking feathered monsters counselling together in a dead tree. Vultures! What else could be so big, so black, so horrid looking! They sat hunched together for all the world like ugly demons plotting mischief. From the train it was impossible to distinguish the species, but it is likely that they were black vultures which are an abundant permanent resident throughout Louisiana.

After that venture into America's most picturesque city, I resolved to make up for lost time. This very day I would begin and devote the whole of it to observing feathered creatures. With this resolution in mind, I said to the negro woman cleaning the room, "Well, I'm setting out to see lots of birds today."

"Why, honey, you won' see no birds," she drawled. "Dey'se all gone now—all but dem ol' chee-chee birds."

"Chee-chee birds?" I queried. "What are they?"

"Just li'l birds dat go 'chee-chee.' Spartries, you say? Uh huh, jus' spartries, das all."

By this time the mistress of the house stopped to say "Good morning," so I took the opportunity to inquire of her about the unusual bird spectacle at Shreveport's courthouse. There each

evening blackbirds gather by the hundreds to roost in the live oaks of the courthouse square. "Why, they're nothin' but li'l ol' blackbirds!" was her dismissal of the question. Such is enthusiasm concerning bird life in Louisiana!

There were still several intervening hours before the evening assemblage of the blackbirds, so I gathered together bird glasses and notebook and set off through the residential section of Shreveport. Live oaks, pines, clumps of the parasitic mistletoe high on bare branches, numerous strange fruits—and seed-bearing shrubs offered shelter and food to bird guests. Noisiest and most numerous of the birds were Florida and northern bluejays, of which I saw eight in just one block. Although the northern bluejay is not distinguishable in the field from the Florida bluejay, the latter is a permanent resident, while the northern is seen less frequently and only in north and central Louisiana.

Farther on was a small flock of six cedar waxwings in a live oak tree. The waxwings, according to Oberholser in *The Bird Life of Louisiana*, are "one of the notable birds that visit Louisiana only in winter." Here they gather in flocks in trees and often face all the same direction—usually toward the wind. A female cardinal, a flicker, the inevitable English "chee chee" birds, and a pine warbler came into view within the next block. The northern pine warbler, by the way, is a fairly common permanent resident in the pine and mixed forests of Louisiana.

By this time the threat of rain became a drizzle dampening both clothes and spirit, but all thought of turning back was driven from my mind by a flash of white against gray—a mockingbird! White wing bars and white outer tail feathers makes a dashing creature of the otherwise modestly dressed singing master of the bird world. Ah, now there were two mock-

ingbirds! Friendly creatures that they are, they flew to a porch roof and staged a ballet for my benefit—the dainty mincing steps of their courtship dance. Then, discouraged by the weather, one departed and the other flew to the top of a neighboring house and huddled with fluffed-up feathers to outstay the rain. Even with the aid of field glasses, there was no more to be seen of them, and I moved on to identify two woodpeckers. Just then two other "birds"—a two-legged variety appearing to have horns, for the moment, rather than wings—drew up in a car labelled "Police."

"What are you doing?" they asked.

"Looking at those woodpeckers," I answered weakly.

"Well we had a report that you were studying the houses in this vicinity through those glasses. Let's see your notes!"

"Here they are but they're in shorthand."

"Hm—that doesn't do us any good—nor you either!"

All that could be done now was to talk my way out of it, so I told them how far I had come, how I hoped to see which Minnesota birds wintered in Louisiana, and how much more interested in birds we are up north. "Yes," I concluded, "my sister warned me Shreveport inhabitants would think me crazy, but I didn't expect to create such excitement as this. I suppose the housewife who reported me was afraid these glasses would reveal unmade beds upstairs. Or was she suspecting sabotage?"

"Well, the glasses had her worried. If you don't want to be thought a suspicious character, don't use them any more around here."

Not use field glasses! Well, I ask you, what good is even an amateur bird student without them? Now I'd never dare probe the mystery of the "li'l ol'

blackbirds" at the courthouse. But I'd go anyway, and hope at least one would come close enough to reveal its identity.

To the best of my judgment of size, sound, and actions, I am fairly sure that many, maybe most, of the birds which beaded every branch of the live oaks were cowbirds, permanent residents and abundant in winter over practically all of Louisiana. Apparently, there were no red-winged blackbirds, though the latter are also permanent residents. The rusty blackbird is a winter resident, but most numerous in the southeastern part of the state. It is possible there were some Brewer's among them, though this species is an uncommon winter resident

seen most often in the northwest part of Louisiana. I wondered about the possibility of grackles in that seething mass of bird life. The boat-tailed and Florida grackles prefer the Gulf Coast region, but the bronzed is common in winter, especially in cities as far north as Shreveport. It is possible, therefore, that there were a few bronzed grackles, though I did not see any.

The combined discouragement of rain reinforced by the admonitions of the police made the Public Library seem a safe and comfortable haven. There I found a copy of *The Bird Life of Louisiana* and settled down, an armchair naturalist, to read of other winter birds I might have seen. Cloquet, Minnesota.



# Minnesota Nesting Record, 1943

By Amy Chambers

Gasoline and tire rationing reduced the opportunities for many M. O. U. members to carry on field work during the summer, but despite this handicap 20 members collected nesting information on 94 species.

This year's leading nest finders were Brother Hubert Lewis and Brother Pius. They reported on a total of 58 species representing 210 individual nestings. The fact that a large majority of their nests were found in and near St. Paul indicates that it is not necessary to go far afield to find and study the nesting life of birds.

The material is presented in as brief a style as possible in order to conserve on space and paper.

\* \* \*

LOON. June 19, 6 young, North Shore, Lake Superior. E. Jones. July 11, 1 young, Leech Lake. K. Carlander.

HOLBOELL'S GREBE. July 25, 3 eggs, Leech Lake. K. Carlander.

PIED-BILLED GREBE. June 29, 7 birds, West City Limits Mpls. F. S. Davidson. July 25, nest with eggs, Leech Lake. K. Carlander.

GREAT BLUE HERON. June 12, feeding young, Washington County, Bros. Lewis and Pius. July 7, Leech Lake. K. Carlander. May 8, several nests in tree tops, Nine Mile Creek, Mpls. A. Chambers.

BLACK CROWNED NIGHTHERON. Ramsey County, May 8, 410 nests; July 10, 1160 nests. Bros. Lewis and Pius.

AMERICAN BITTERN. Ramsey County, June 15, 4 eggs. Bros. Lewis and Pius.

LEAST BITTERN. Mpls., June 3, nest being built; July 21, young well grown. Francis S. Davidson.

MALLARD. June 3-9, 22 young, West City Limits Mpls. F. S. Davidson. July 28, 12 week old young, Cass Lake. K. Carlander. May 25, Fort Snelling, 2 nests. Bros. Lewis and Pius.

PINTAIL. Duluth, August 2, one young able to fly. Hulda and Mabel Adams; Mary Elwell, O. Lakela.

BLUE-WINGED TEAL. June 1, Winona County, 10 eggs. Bros. Lewis and Pius. June 24-July 5, 3 nests, Mpls. F. S. Davidson.

WOOD DUCK. North Mpls. 13 eggs, April 17. W. J. Breckenridge.

GOLDEN-EYE. 2 nests, young out of nests, July, Leech Lake and Cass Lake. K. Carlander.

RUDDY DUCK. August 1, Mpls., 10 young. F. S. Davidson.

AMERICAN MERGANSER. Several families, North Arm Burntside Lake, July 26. A. Chambers.

GOSHAWK. 16 miles north Duluth. 2 birds, July 24. O. Lakela.

RED-TAILED HAWK. April 26, above Stillwater. Bros. Lewis and Pius.

RED-SHOULDERED HAWK. April 26, 3 young, Ramsey County. Bros. Lewis and Pius.

BROAD-WINGED HAWK. May 31, 3 eggs, North Mpls. W.J. Breckenridge. June 17, small young, Ramsey County. Bros. Lewis and Pius. July 26, St. Louis County, 2 half-grown young. A. Chambers.

SPARROW HAWK. April 15, Ramsey County. Bros. Lewis and Pius.

BOB-WHITE. Winona, June 5, 8 eggs. Bros. Lewis and Pius.

RING-NECKED PHEASANT. May 8-30, 3 nests, 42 eggs, Hennepin County. Bros. Lewis and Pius.

VIRGINIA RAIL. May 31 and June 6, Ramsey County. Bros. Lewis and Pius. Mpls., 5 young, July 4, F. S. Davidson.

FLORIDA GALLINULE. May 31, 5 eggs, Ramsey County. Bros. Lewis and Pius. Several nests with small young. West city limits of Mpls. F. S. Davidson. June 29 and July 3.

COOT. Mpls., Several nests, June 3, July 15. F. S. Davidson. May 31, 5 nests, Ramsey County. Bros. Lewis and Pius. Leech Lake, July 18, young out of nests. K. Carlander.

KILLDEER. May 17, 3 nests, Ramsey County. Bros. Lewis and Pius. St. Louis County, 1 young, August 1. O. Lakela. In May 20 eggs found in four nests, Duluth by Misses Lakela, Elwell, and Brown.

UPLAND PLOVER. Crookston, 2 eggs, June 8. W. J. Breckenridge.

SPOTTED SANDPIPER. North Mpls., a nest of 4 eggs hatched on June 15 and one of three eggs on June 17. W. J. Breckenridge. St. Louis County, 3 nests: May 29, M. Savage; June 19 and June 30, E. Jones.

BLACK TERN. June 15-July 11, several nests, Mpls. F. S. Davidson. 15

nests, May 31, Ramsey County. Bros. Lewis and Pius. Superior Bay, Duluth, August 1, 2 young. O. Lakela.

ROCK DOVE. May 26, young, State Capitol, St. Paul. K. Carlander.

MORNING DOVE. June 3, Mpls. F. S. Davidson. May 13, Como Park, St. Paul. W. J. Breckenridge. May 5, 7 nests, Highland Park, St. Paul. Bros. Lewis and Pius.

BLACK-BILLED CUCKOO. 2 nests, June 13, 8 eggs, Ramsey County. Bros. Lewis and Pius.

SCREECH OWL. May 9, young in nest, north Mpls. Vern Carlson.

GREAT HORNED OWL. May 1, Minnesota River, Hennepin County. Bros. Lewis and Pius.

NIGHTHAWK. 2 nests, June 4, Ramsey County. Bros. Lewis and Pius.

RUBY-THROATED HUMMING BIRD. June 3, carrying nesting material, Mpls. F. S. Davidson.

BELTED KINGFISHER. May 29 and June 28, 3 nests, Washington County. Bros. Lewis and Pius.

FLICKER. May 8, 6 nests, Ramsey County. Bros. Lewis and Pius. May 4, Harriet Bird Refuge, Mpls. F. S. Davidson.

RED-HEADED WOODPECKER. May 24, St. Paul, nesting. K. Carlander. July 29, Cass Lake, young. K. Carlander.

DOWNY WOODPECKER. Lyndale Park, Mpls. April 25. K. Carlander.

KINGBIRD. Leech Lake, July 24. K. Carlander. 3 young on telephone wire near Duluth, July 24. O. Lakela. June 8, Winona County, 4 eggs. Bros. Lewis and Pius. June 13, Scott County, nest in farmer's pasture. A. Chambers.

CRESTED FLYCATCHER. Minneapolis. W. J. Breckenridge.

PHOEBE. July 3, 4 young, St. Louis County. E. Jones. June 28 and July 18, young and eggs, Cass County. K. Carlander. North Mpls. June 2, 4 eggs. W. J. Breckenridge. April 20-July 7, 6 nests, Ramsey County. Bros. Lewis and Pius. July 26, nest over Finnish Bath House, 2 birds, North Arm Burntside Lake. A Chambers.

LEAST FLYCATCHER. Mpls., 2 eggs, June 26. W. J. Breckenridge. St. Louis County, 3 young, July 29. O. Lakela.

HORNED LARK. April, 4 nests, Ramsey County. Bros. Lewis and Pius. May 23, young being fed, Anoka County. W. J. Breckenridge.

TREE SWALLOW. 6 nests, Ramsey County, April 22-May 17. Bros. Lewis and Pius. North Mpls. 4 eggs, June 27. W. J. Breckenridge.

BANK SWALLOW. June 24, Leech Lake. K. Carlander. May 8-29, 35 nests, near St. Paul. Bros. Lewis and Pius.

ROUGH-WINGED SWALLOW. June 24, eggs and young, Leech Lake. K. Carlander. 8 nests, June 22, Dakota County. Bros. Lewis and Pius.

BARN SWALLOW. St. Louis County, July 19, 5 young. O. Lakela. June 24, Leech Lake, young. K. Carlander. June 1-29, 5 nests, Ramsey Washington, and Winona Counties. Bros. Lewis and Pius.

PURPLE MARTIN. June 24, eggs and young, Leech Lake. K. Carlander.

BLUE JAY. 3 nests. Ramsey county; Dakota and Winona counties, May 5, 29, and June 8. Bros. Lewis and Pius. Harriet Bird Refuge (Mpls.), June 5. Francis S. Davidson.

CROW. St. Louis County, April 19, 4 eggs. E. Jones and H. Gilbert. May 8, Ramsey County, 5 nests. Bros. Lewis and Pius.

BLACK-CAPPED CHICKADEE. May 8, Ramsey County. Bros. Lewis and Pius.

WHITE-BREASTED NUTHATCH. May 27, nest, St. Paul. K. Carlander. June 10, young being fed, north Mpls. W. J. Breckenridge. May 22, Stillwater. Bros. Lewis and Pius. June 17, 2 nests, Lake Johanna, Ramsey County. Bros. Lewis and Pius. June 6-9, 2 nests, Mpls. F. S. Davidson.

HOUSE WREN. N. Mpls., 7 eggs, June 9. W. J. Breckenridge. 2 young, July 26, North Arm Burntside Lake, St. Louis County. A. Chambers. May 27, St. Paul, eggs. K. Carlander. July 10, 3 nests, Cass County. K. Carlander. July 29, nest with young, Cass County. K. Carlander. July 26, nest with young, Itasca County. K. Carlander. St. Louis County, 3 young, July 18. O. Lakela. Duluth, 4 young, July 20. E. Jones.

CATBIRD. 13 nests, May 29, July 1, Ramsey, Dakota, Winona Counties. Bros. Lewis and Pius. June 20, 4 eggs, 6 miles N. Mpls. W. J. Breckenridge. Duluth, 2 nests, July 18, Fay Cuzner; July 14, Sister Sheilagh.

BROWN THRASHER. June 4, Winona, 7 nests. Bros. Lewis and Pius.

ROBIN. 3 nests, June, 7 young, Hennepin County. S. C. Holmberg. 4 young, May 20, Como Park. W. J. Breckenridge. 2 nests, April 4, Ramsey County. Bros. Lewis and Pius. April 20, Cass County, left nest July 28. F. B. Smythe. April 13, Mpls. F. S. Davidson. St. Louis County, 4 nests, May 8-14. Maude Lundgren, Hulda Adams, Ralph Bolder. Joel Bronoel, O. Lakela. July 10, 4 eggs, Cass County. K. Carlander.

WOOD THRUSH. June 15, Ramsey County, 3 nests. Bros. Lewis and Pius.

VEERY. Duluth, July 22 and July 31, young. O. Lakela.

BLUEBIRD. Ramsey County, 3 nests, April 6 to June 6. Bros. Lewis and Pius. St. Louis County, 2 young out of nests, August 7. O. Lakela. Six miles N. Mpls., 2 nests with 7 eggs. W. J. Breckenridge.

CEDAR WAXWING. June 18, Ramsey County, Bros. Lewis and Pius. St. Louis County. 4 young, July 30. O. Lakela. Leech Lake, June 25. K. Carlander.

STARLING. May 19, young in nest, State Capitol, St. Paul. K. Carlander. May 13, Lake Harriet, Mpls., young in nest. F. S. Davidson.

YELLOW-THROATED VIREO. No. Mpls., June 5, building. W. J. Breckenridge.

RED-EYED VIREO. Hibbing, 4 young, July 5. E. Jones, M. Smith. Cass County, young out of nest, July 10. K. Carlander. June 10, 2 eggs, North Mpls., W. J. Breckenridge.

WARBLING VIREO. Ramsey County, June 15 and 22, 3 nests. Bros. Lewis and Pius.

BLACK AND WHITE WARBLER. St. Louis County, 2 young. O. Lakela, E. Jones, C. Lieske, and Dr. and Mrs. Gregg.

YELLOW WARBLER. 2 nests, June 6, N. Mpls. W. J. Breckenridge. St. Louis County, 3 young, July 23. O. Lakela. 6 nests, June 4 to 17, Winona and Ramsey Counties, June 6. Bros. Lewis and Pius.

BLACKBURNIAN WARBLER. Douglas County, Wisconsin (Salon Springs), 3 young, July 27. E. Jones.

CHESTNUT-SIDED WARBLER. St. Louis County, 3 young, July 11. E. Jones.

LOUISIANA WATER-THRUSH. July 10, Stillwater, nest in cavity of rock. Bros. Lewis and Pius.

MOURNING WARBLER. Duluth, July 17, 3 young. E. Jones.

YELLOW-THROAT. June 8, 4 eggs, Winona. Bros. Lewis and Pius.

REDSTART. North Mpls., completed nest, June 5. W. J. Breckenridge.

EASTERN MEADOWLARK. June 4, Winona, 3 young; June 22, St. Paul, 2 young. Bros. Lewis and Pius.

WESTERN MEADOWLARK. 2 nests with 4 eggs, Fort Snelling, June 19. Bros. Lewis and Pius.

YELLOW-HEADED BLACKBIRD. Ramsey County, 4 nests, May 31. Bros. Lewis and Pius. Leech Lake, 1 nest, June 26. K. Carlander.

RED-WINGED BLACKBIRD. Ramsey County, 17 nests, May 31 to June 15. Bros. Lewis and Pius. Leech Lake, 1 nest, June 24. K. Carlander.

ORCHARD ORIOLE. June 8, Winona, 4 eggs. Bros. Lewis and Pius.

BALTIMORE ORIOLE. July 26, Cass Lake. K. Carlander. May 29- June 22, Ramsey County, 4 nests. Bros. Lewis and Pius.

BREWER'S BLACKBIRD. Ramsey County, 3 nests; May 5, building nest; June 13, feeding young. Bros. Lewis and Pius.

BRONZED GRACKLE. May 9, nest under Lake Street Bridge, Mpls. K. Carlander.

COWBIRD. July 26, 1 egg in Baltimore oriole's nest. Cass Lake. K. Carlander. St. Louis County, July 27, in chipping sparrow's nest. O. Lakela.

CARDINAL. June 25, 1 egg, Glenwood Park, Mpls. S. C. Holmberg. Dakota County, 2 nests with 7 eggs, May 29 and June 13. Bros. Lewis and Pius.

ROSE-BREASTED GROSBEAK. June 13, 4 young, Ramsey County. Bros. Lewis and Pius. North Mpls., 3 eggs, June 13. W. J. Breckenridge.

INDIGO BUNTING. 3 nests, June 28, and August 4 and 11, Highland Park, St. Paul. Bros. Lewis and Pius.

PURPLE FINCH. St. Louis County, 1 young. O. Lakela.

GOLDFINCH. 47 nests, with average of 5 eggs each; 18 nests from which young had gone. Ramsey County, during August. Bros. Lewis and Pius. Duluth, feeding young, September 18. H. R. Adams. Mpls., F. S. Davidson. June 14; carrying nesting material.

SAVANNAH SPARROW. May 25, 4 eggs, Mpls. F. S. Davidson.

VESPER SPARROW. North Mpls., 1 egg, June 17. W. J. Breckenridge.

LARK SPARROW. July 1, Hastings, 3 eggs. Bros. Lewis and Pius.

CHIPPING SPARROW. 8 nests, Winona and Washington Counties, May 18-June 12. Bros. Lewis and Pius. 4 eggs, June 8, Crookston. W. J. Breckenridge. June 13, Scott County, 2 young. A. Chambers. St. Louis County, July 24. O. Lakela.

CLAY-COLORED SPARROW, 5 nests, June 12-August 21, Ramsey County. Bros. Lewis and Pius.

FIELD SPARROW. June 11, 4 eggs, Snelling Reservoir, St. Paul. Bros. Lewis and Pius.

SONG SPARROW. St. Louis County, 2 nests, June 27 and July 14. H. Adams, O. Lakela, Dr. and Mrs. Gregg, C. Lieske, and E. Jones. 3 eggs, June 3, Mpls. W. J. Breckenridge.

Minneapolis, Minnesota.



## NOTES OF INTEREST

THOUGHTS WHILE WATCHING A WARBLER WAVE—From an upstairs window I am watching a warbler wave. It is 10:30 a. m., May 15, 1942. The scene below is large oak trees, lindens, a garage, and a bird bath.

Flame colored and black redstarts; two yellow warblers now in the bath, one whose breast stripes are so deep. A veery with lovely cinnamon back and pale throat, stops, bathes, and with those great big eyes has spied me, and with startled behaviour and crown feathers raised, examines me intently with head cocked on one side. A water thrush bobbing about on the garage roof finds many green worms to his liking. A northern yellow-throat comes into the field of my binoculars as I admire a black-throated green, and now a stray myrtle warbler that seemed almost common awhile back among the early spring arrivals. The songs of chebecs, Baltimore orioles, Tennessees, black-bills, and Grinnell's wild and dank notes; then a yellow warbler or is that the redstart's song? It appears to be a medley of both. Two catbirds wait turns at the bath. Numerous flame spots move through the high branches. Black-polls by the dozen loiter and bathe three at a time. One looks big and puffed out on a branch over the bath while one now bathing appears as streamlined as a gnatcatcher.

Magnolias are plentiful. There is a trim little palm mincing out from under the lilacs. My, how strange the brown thrasher's loud song sounds among the tiny lisplings of many warblers! Even the pheasant's *konk-konk* rings out from the distance. Now a beautiful chestnut-sided carefully bathes with a Tennessee. They daintily step in, a bit hesitant in deference to each other perhaps, but find it works beautifully together. A female yellow-throat in wren-like posture waits below. When an interval of silence breaks, the soft purring breath-expelled song of the parula is heard along with the tanager's *chip-churr* and the minor notes of the olive-sided flycatcher. The gray-cheeked and olive-backed, like the large cement open space in front of the garage where worms are easily seen. They move rapidly, very robin-like, when pursuing worms but, of course, more daintily. A black and white tries out the bath alone, and a dear little Wilson's warbler rests a minute beside an olive-backed thrush on the ground under the shade of the hydrangea leaves. Even the red-headed woodpecker's bright head is seen through the trees, and a great-crest's noisy call is heard as he makes his dashes for insects or hanging worms. The lovely liquid song of the wood thrush! What a thing of beauty it is—like a poem! He is singing from his position on the ground as he picks up food. How pink his legs are!

How brilliant the male scarlet tanager is among the fresh green leaves! Those two mourning doves so close together on a branch high up in the trees, I wonder how they are enjoying the concert? At last a Canada warbler comes into view darting out and back in flycatcher fashion. There is a water-thrush bathing. It is almost pale enough on the throat to be a Louisiana, but there, it shows a spotted throat which proves it to be a Grinnell's. A Nashville and a Tennessee argue in open-mouthed and spread-winged battle to see which bathes first. The former wins out. The latter I not only hear but see also today. What is that? Oh, yes, a

blue-headed vireo! What cute spectacles. What a subdued song he is throating! Oh, while I wonder over the chestnut-sided, Nashville, Tennessee, and black and white all bathing in such sweet harmony, the male scarlet tanager alights on the garden hose waiting his turn. He is patient. The quartette does not keep him waiting long.

Two o'clock With Lu Rice. Now an oven-bird is giving us his teacher song while walking through the wild-flower garden. We hear a cowbird occasionally. Finally a bay-breasted shows up but is only a female. Mrs. Yellow Warbler and Mrs. Redstart are bathing together. Now Mr. Yellow joins them. Now a Wilson hurries them off and takes his turn.

6:45 p. m. What a gorgeous bay-breasted male! His head is a dark velvety black. A charming gray-cheeked is bathing. How well defined its markings are. Its cheeks are so dark.

Sunday May 17, 1942, 3:45 p. m. The panorama still continues in a lesser degree. Not having seen an orange-crowned during this wave, I look closely to see if this could be one, when a lovely mourning comes around a large tree and collides head on with a Nashville. They flit up and down on the ground facing each other in cock-fighting fashion but only for a few seconds. Yes, an orange-crowned bathes, and favors me by showing his orange crown feathers. Here is a female redstart with a prominent black line through the eye. No, on closer inspection I discover him to be a year old male. He lacks the many breast spots that some of the year old birds have. In the bath I notice the black-polls show such colorful cream pink legs. The brighter warblers such as the Nashville show legs dull and colorless. The redstart's legs are black to match his back.

Mrs. Rollo H. Wells, Minneapolis, Minnesota.

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AN INTERESTING YELLOW WARBLER NESTING—On May 21, 1943, my family and I spent an interesting afternoon watching a female yellow warbler which came to the bushes outside the living room windows of our home near Wayzata, at Lake Minnetonka to pick up nesting materials offered them. During the whole time, we went about our normal activities in the living room, the windows of which were uncurtained, and took no precautions beyond remaining still while the bird was present. At about 1:00 p. m., I took the following timed observations of her activities:

Absent: ----- 1 min., 20 sec.

Present: ----- 20 sec.

Absent: ----- 40 sec. Called several times upon return.

Present: ----- 2 min., 20 sec. Finally pulled a piece of tangled thread loose, but when it caught again, flew off without any.

Absent: ----- More than 15 minutes. Next seen at 1:49. Called upon arrival.

Present: ----- 1 min., 45 sec. Bumped against glass upon departure.

Absent: ----- 4 min., 40 sec. By this time she was not trying nearly so hard to loosen the pieces. If on a tentative tug, it seemed to be caught, she abandoned it for another.

Later that afternoon, my next-door neighbor phoned to say that yellow warblers were building in the lilac bush at the corner of her porch. I went over to see, and found the nest nearly completed quite close to the screen. On Sunday my neighbor's grandchildren and several adults visited her causing much disturbance on the porch. The following afternoon the nest was missing. We looked very carefully but could find no trace of it which seemed to exclude any possibility that the nest had been blown or torn down. Later evidence led us to conclude that the birds found the location unfavorable and moved the nest.

On May 25th as I was walking along the road in front of the house, I heard the alarm notes of yellow warblers. Looking closely, I found a nest at eye level in a honeysuckle bush so close to the road that it could easily have been reached from a passing car. Because the nest that disappeared from the corner of my neighbor's porch and this nest were built of the same kind of materials that I had put out, and because during this period I am quite sure that no other yellow warbler came for nesting materials, I believe the same birds built both nests, probably using materials from the first nest in the construction of the later one. On the 31st, the female was sitting on the nest and on June 9 there were five young in the nest. So far as I know, all were reared safely.

Sadah W. Field, R. F. D. Holdridge, Wayzata, Minnesota.

HUDSONIAN CHICKADEES IN MINNEAPOLIS—This season we in Minneapolis are enjoying the visit of two little strangers from the far North, Hudsonian chickadees. Mrs. E. H. Jensen of the Minneapolis Audubon Society saw them at Glenwood Park, November 21, 1943; and up to the time of this writing they are being frequently observed by several members of the Club. So far, this has been an open winter here, and much of the time they feed quietly and industriously on the ground under the pines. In the shade of the trees their plumage soberly blends with the colors of the pine needles, but in the sunlight their cinnamon brown sides, brown caps, little black bibs, and other markings are bright and distinct. They are not as talkative and inquisitive as the black-capped chickadee, and their staccato "chick" and raspy nasal "ze, ze" is uttered much less often. On warm sunny days they sing a sweet trilling spring song, but usually they are so quiet that only a faint chip indicates their presence.

Often I stand close enough to touch them but they seem entirely unaware of me. Man seldom goes to the lonely forests where they live, so to them a human being must be just another tree.

Once a beautiful male cardinal flew down to the ground beside them, curious to see what they were eating. The birds made a lovely picture but the gorgeous cardinal didn't eclipse the little chickadees with their quiet manners and sweet charming ways.

We are fortunate to have the privilege of observing these birds so intimately and for so long a period. According to Roberts' "Birds of Minnesota" they generally breed in northern North America and are an uncommon permanent resident in northern Minnesota. There are few records of their being seen as far south as Minneapolis.

Mary Lupient, Minneapolis, Minn.

OBSERVATIONS IN WISCONSIN— I always miss out on the Christmas bird census in Duluth, as I spend my vacation 225 miles to the south at Black River Falls, Wisconsin. However here is a list of the birds I saw there, while out on

several hives: many bluejays, a flock of pine siskins, a dozen black-capped chickadees, several white-breasted nuthatches, brown creepers, downy woodpeckers, one red-headed woodpecker, one flicker, one cardinal, two crows in town, and a flock of a dozen along the road to Tomah. Near a feed mill and depot, about one hundred English sparrows sat along a fence having a chattering meeting in the bright sun. Friends reported seeing pileated woodpeckers near town for the first time. I saw a freshly tapped oblong hole in a small white pine which may have been their work.

Temperatures during the last two weeks in December stayed more in the twenties than near zero, and no snow covered the ground. We were sorry we had not taken a picnic lunch while hiking over Castle Mound. Next day while skating on the river, we saw a family having a picnic on an island.

Evelyn A. Jones, Duluth, Minnesota.

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**EVENING GROSBEAKS AT DULUTH**— We have lived in Duluth over 50 years and had never seen an evening grosbeak until February 12, 1943, when we were visited by a party of about 30 of these beautiful birds. They stayed with us until about April 20, when all but two males and two female left us. We thought perhaps that they would remain and nest in Duluth. They were very quiet and seemed lonesome; they moved around very little. In about ten days they also departed.

This fall, November 25, 1943, a flock of over 50 visited us and remained together about 10 days when they split up. Ever since then and up to the present (January 16, 1944) 10 to 30 of them come every morning and have breakfast by the kitchen window. They never miss coming back between 12 and 1:30 p. m. to have lunch on their feed box by the kitchen window, while we are eating. Mrs. Huntley and I feel it well worth the thirty cents a week we spend for sunflower seed to have the company of these friendly visitors during our winter meals.

Mr. and Mrs. W. W. Huntley, Duluth, Minnesota.

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**THE RAVEN IN NORTHWESTERN LAKE COUNTY**— Early on the morning of September 24, 1943, my wife and I left Winton by canoe on Fall Lake to spend four days with some friends at the exit of Pipestone Bay on Basswood Lake—about 16 miles out from Winton. It was interesting to note that there were crows in the vicinity of Winton both on our departure and on our return, but none out at the part of Basswood Lake where we stayed. However, during our four days in the lower parts of Pipestone and Jackfish Bays we saw ravens several times each day, always singles except one group of three. They were generally soaring in a manner that reminded me of turkey vultures, usually at a distance. One, however, soaring just over the treetops, came over a slight ridge very close to us before it was aware of our presence.

Lloyd E. Scherer Jr. Duluth, Minnesota.



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# THE FLICKER

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## Nesting of the Least Bittern

by

Frances S. Davidson

A short way beyond the southwest limits of Minneapolis, 66th Street runs through a marsh which until recently has had an abundant growth of marsh grass, quill reeds, and cat-tail flags. It has been a favorite breeding place for blue-winged teal, mallards, ruddy ducks, black terns, rails, coots, gallinules, bitterns, marsh wrens, and red-winged and yellow-headed blackbirds.

The heavy rains of last spring (1943) checked the growth of the vegetation by drowning it out and confining it mostly to the edges of the marsh and a few little islands in the open water. The resulting housing shortage was acute and compelled some of the tenants to select nesting sites not so well concealed as usual. Thus it was that a pair of least bitterns chose for the location of their nest a thin line of cat-tails not far from the road and easily observed from my car window as I parked opposite it.

When I discovered it about 7 p. m. on June 3, it was in process of building. The female was feeding not far away while the male was working on the nest busily fastening together the tips of the cat-tail blades to form a roof and walls about a foot high with the bottom of the nest a few inches above the water level. I could not see the interior,

but I could get a good view of the outside and could watch the parent birds as they furtively slipped through the cat-tails on their way to and from the nest.

The male seemed to do most of the work and was unremitting in his labors. The female took her ease inside the nest, but they both often occupied it together. At that stage of building they entered and left by the side opening, or rather by an exit on either side. Very heavy rains approaching cloudbursts raised the water level till it was dangerously close to the floor of the nest, but the birds seemed untroubled and remained on duty.

Once when the bitterns were a few feet from the nest, a black tern attacked them viciously; but they only cowered before the onslaught and made no attempt to defend themselves. Another time a second male of the species entered their territory whereupon Father Bittern appeared opposite him and assumed a crouching hump-shouldered attitude with indrawn neck and eyes glaring so menacingly that I almost fancied that I could hear him growling. The intruder "froze" with his neck stretched to its extreme length, beak pointed skyward, and eyes equally glaring. There they posed, motionless,

challenging each other like two tomcats until the interloper's conviction of guilt made a coward of him and he fled never to return, at least when I was present.

For two weeks the bitterns took turns at brooding, but their comings and goings were so irregular and the intervals between so long that I could form no estimate of the lengths of the periods involved. On June 23, twenty days after I discovered the nest, I thought they were carrying food; but the next day their activities waned perceptibly. The lady seldom appeared, and her partner spent so much time repairing the now delapidated nest that I may have mistaken for food the bits of material he used to chink up the apertures of the walls which had become so large that one could get a partial view of the interior. He gathered pieces of quill reeds and cat-tail leaves which he carried one at a time to the nest. He seemed to have no assistance in his labors.

By July 2, a month after I found the nest, the birds were again taking turns at brooding. There was considerable motion in the nest now and then I could see a head within which seemed to belong to an adult. On the sixth the male was still constantly carrying material which he now gave to his mate inside the nest. With this she chinked the walls until I could no longer see into the nest. On this day he brought a very long, brown, water-soaked cat-tail blade. The effort so exhausted him that he paused to recuperate on the flags, though he still had sufficient energy to "kwok" angrily at a black tern which came to close to his home.

Later he flew across the road to feed in the unappetizing-looking water the surface of which was covered with duckweed. From the depths he drew forth a slimy-looking creature between two and three inches long and the thickness of

my little finger. It was black above and dirty white below, and though it seemed quite inert, it required much shaking and jerking before it was sufficiently "squashed" to suit his taste. When he had swallowed it, he stretched his neck to an incredible length and its successive bulges marked the progress of his loot gizzard-ward. At length he settled down comfortably for a prolonged sunbath.

The next three days were repetitions of the preceding ones—irregular exchanges on the nest and continual repairing of its walls. By this time, in fact long before this, the situation had become decidedly puzzling. For more than five weeks I had watched these birds; and though their eggs are supposed to require no more than 17 days to hatch, not a sign had there been of an infant. There was the possibility that the torrential rains and the resulting rise of the water level might have chilled the eggs. The behavior of the parent birds seemed to me so erratic and incomprehensible that I questioned whether the too-optimistic parents might fail to realize the calamity and continue to sit on ad infinitum. But on the thirty-seventh day there was unmistakable evidence in the nest of a living presence other than that of the parent birds, and the next day I could distinguish small white heads—downy ones—upstretched. The adult birds now began to enter the nest from the top instead of from the sides. A day later the mother caught a frog, dismembered it and gulped it down. No doubt she carried it to the young, but she was so adept at fading from view that I did not see her actually enter the nest.

The next day a small downy dirty-white addition to the least bittern tribe scrambled from the nest and clambered precariously among the adjoining cat-tails. Twice he lost his footing and slid down to the surface of the

water, but each time he recovered himself and soon returned in triumph to his home. That he was mature enough to do this indicated that he had emerged from the egg several days before I had any intimation that hatching was in progress. I have been unable to find any data as to the length of time required for nestling least bitterns to develop to this stage of their growth.

On the fortieth day of my observations three youngsters were spending much time outside the nest, and were being fed by regurgitation, sometimes with extreme vigor, by both parents. They grabbed their parents' beaks and held on so tenaciously during the rather disgusting-looking process of pumping in the food that sometimes they were almost lifted off their feet. They moved about among the cat-tails and "froze" in comical imitation of their parents. They were least bitterns from the very beginning. There was no mistake about that, and it was great fun to watch them.

They were not fed often—an hour or more between feedings. Sometimes it seemed that there was a lapse of two or three hours, but the mother in particular was so wary in her approaches to the nest that no doubt she sometimes came and left unobserved. Some authorities say that all the nestlings are fed at the same time, but frequently I saw one favored to the exclusion of the other two that would remain with beaks hopefully stretched for several seconds after the parent bird had departed. This made them look silly to say the least. Once when the mother arrived with food, one of the young several feet away in the cat-tails sped madly homewards to share the feast. This was the only time I ever saw one of these very deliberate children make haste.

The oldest of the youngsters was noticeably larger than the others. He feathered out and became a rich brown on the back while the younger birds still retained their baby down, but even he wore long white down which stuck up aggressively on his fierce-looking little head. His change of plumage took place in exactly six days. He was bolder and strayed farther from the nest than the two more timid ones.

On July 21, 48 days from the discovery of the nest, I left the city for a week. When I returned the nest was deserted, but for some time afterwards I saw the young feeding in the marsh.

I was eager to learn the calls of the least bittern, but I was disappointed in that. Much of the time they were completely silent, and even when I could see them calling, the noise of the terns, the backbirds, and the countless planes overhead drowned their voices. I occasionally heard a low kuk-kuk-kuk and sometimes a soft cooing resembling the distant call of a mourning dove, but I could not be sure that they came from my birds in the nest. The only sound that was unmistakably bittern was the kwok that was used as a challenge to a passing foe or as a greeting when the birds met at the nest.

In a few ways my bitterns seemed to be not quite true to type; they did not always follow the rules. However, Mr. Bittern was unfailingly a model for his kind. Although so handsome, he was always the hardworking faithful family man, a good provider, handy around the house, courteous to his wife, devoted to his offspring, and possessed of an attractive personality in contrast to that of his somewhat drab and innocuous lady. I saw a good deal of him for six weeks and feel that he merits this tribute.

Minneapolis, Minnesota

# Observations on the Life History of the Ruby-Throated Hummingbird

by J. Reuben Sandve

During the summer of 1943, at the University of Michigan Biological Station in Cheboygan County, Michigan, I had the opportunity to make some observations on the nesting habits of the ruby-throated hummingbird (*Archilochus colubris*). This study was carried on as a requirement for a course in Advanced Ornithology, and with the help and direction of Dr. Olin Sewall Pettingill, Jr. Observations were made between July 7, when a nest with two young was discovered, and July 21, when the young left the nest. Although observations on a number of nests would have been more desirable, no attempt was made to find others both because of the lateness of the season and the unlikelihood of finding any within the Station area.

The purpose of this study was to gain further information on a necessarily limited phase of the life history of the ruby-throated hummingbird which would contribute in a small way to a better understanding of its habits and behavior.

Observations were made almost exclusively from a tower blind whose floor was located four feet from the nest. A limited amount of observation was done outside of the blind with a pair of eight-power binoculars.

## NEST

The nest was located in a small birch (*Betula alba*) about 22 feet from the ground and four feet out on a limb

which was one-half inch in diameter. It was saddled on a smooth portion of the branch with no apparent irregularity or projection to aid in keeping it upright. It was composed chiefly of plant down and spider webs, covered on the outside as well as on the rim with small bits of lichen. The lining of the nest appeared to be the same as the main body of the nest, the whole of which was soft and flexible.

The dimensions of the nest were as follows: outside diameter 3.5 cm.; inside diameter 2.2 cm.; depth 2.1 cm.; and height measuring from the bottom of the supporting branch 3.8 cm. The nest when first seen was cup-shaped, but as nesting progressed and the young birds grew larger, it became flattened and lost some of its neat appearance. The opening of the nest could be completely covered with the ball of the thumb. The rim of the nest was turned in suggesting a flanged or rolled appearance, which resulted in a smaller opening than the actual diameter further down in the nest. This might be considered as an adaptation for retaining the contents of the nest in the early stages of incubation. Later on this edge is rolled back and out as the nest stretches and the young require more room.

## HABITAT

The forest flora of the area surrounding the Biological Station is a second growth which has come in since

the region was burned over almost 60 years ago. The drier parts are covered with a dense growth of large sapling-sized poplars and birches, and the more swampy areas with spruces and cedars. The nesting site was made up of small birches, maples and poplars. The following trees were the most common in the vicinity adjacent to the nest: red maple, large-toothed aspen, quaking aspen, white birch, red oak, and pin cherry.

The herbaceous flora in the immediate vicinity was made up chiefly of the following: bush honeysuckle, orange hawkweed, spreading dogbane, bracken fern, red clover, alsike clover, clintonia, wintergreen, blueberry, and wild sarsaparilla.

The nesting tree was located 12 feet from "D" Street and about equidistant from Upper Drive East and East State Street. The whole station area slopes toward Douglas Lake, the shore of which was 200 feet from the nest. Although the above streets had considerable traffic during the time the study was in progress, there was little activity or disturbance at the time the nesting site was being chosen. Therefore it can be considered a fairly typical site for a hummingbird nest in this region. According to A. A. Saunders as quoted by Bent's "Life Histories" (1940) the ruby-throat shows a preference for building its nest above open spaces or above water. Although both of these conditions were available in the immediate area, this pair of birds did not choose to utilize them.

The food supply (speaking chiefly of nectar) was scant in the area adjacent to the nest. Bush honeysuckle, hawkweed, and clover made up the greater part of the plants flowering at the time the study was being made. It is doubtful if they furnished any of the food necessary for maintenance of the young and the parents. Hummingbirds

were never observed feeding in the vicinity of the Station.

#### DEVELOPMENT OF THE YOUNG

On July 7, the young were estimated (see Forbush, "Birds of Massachusetts," Vol. 2, 1927) to be six or seven days old. Their eyes were just beginning to open, and they were naked except for conspicuous down on the spinal tract. Their response to the parent bird at feeding time was rather feeble, and they generally did not open their mouths until the parent presented her bill. Their weights at this time were 2.13 grams (No. 1) and 2.15 grams (No. 2). When placed on the scales on their backs they were unable to right themselves but made ineffectual grabbing motions with their feet. Fecal material at all times was disposed of by forcible ejection over the side of the nest.

On July 10, when the young were ten days old, their bills began to lengthen. Previous to this their bills were not noticeably longer than those of young warblers. The first fluttering of the wings was also seen at this time.

On July 11, youngster No. 1 weighed 3.5 grams and No. 2 weighed 3.7 grams. Their power of grasping was better developed, and when they were taken from the nest, they hung tenaciously to the lining, tearing some of it out as they were removed. When placed on the scales they were able with some difficulty to right themselves. The outermost primaries measured 0.5 cm. long. At this stage the young were beginning to move around more in the nest. The nest which had been quite ample in size until this time was now well filled, and it was necessary for the two young to sit side by side in order to fit in comfortably.

When the young were 13 days old they seemed to be more aware of their surroundings than previously. Fear was

well developed at this time as evidenced by a sort of cringing when the observer's hand was brought near the nest.

From this point on the development of the young proceeded swiftly. Primaries and tail feathers developed rapidly, and the body feathers began to appear. The increase in size compelled the birds to keep their heads up against the rim of the nest and their bills almost perpendicular.

On the fifteenth day (July 15) the first attempts at preening were noted. The action consisted of a few ineffectual jabs at the base of the tail by bird No. 2. Activities such as turning in the nest and moving the head about (the eyes were fully open at this time) were gradually increasing. A suggestion of the green-bronze color which is characteristic of the adults was detected on the backs of the young. From here on the resemblance to the adult birds developed rapidly.

At the age of 17 days bird No. 1 weighed 3.6 grams, and No. 2 weighed 4.1 grams. The difference in weight is considerable for a bird of such a small size. A difference in the feeding habits might have been responsible. Bird No. 2 always opened its mouth when the parent bird approached the nest, but No. 1 generally waited until the bill was presented. Consequently No. 2 was always fed first, and therefore might have received a larger share of the food. Both of the young were considered females because no dusky markings (Roberts, "Birds of Minnesota," 1936) were to be seen on their throats. If such was the case, the variation in weights could not be attributed to sex.

At this time the birds preened themselves actively and frequently exercised their wings. The wing beatings did not appear effective in lifting them from the nest. Primaries measured from 1.3 cm. to 1.5 cm., tail 0.8 cm. and bill 0.8 cm. The bill now had more of the adult

appearance but was much shorter than the average (1.4 cm.) of three specimens measured in the Biological Station collection. The juvenal plumage was nearing completion and the young looked much like the adults. The green-bronze coloration covered the entire upperparts, but it was not as intense as in the adult.

A great increase in awareness was evident at this stage. Insects flying about the nest were watched closely by the young as were birds which might pass by. Noises in the blind, such as the rustling of paper, also caught their attention. When the observer's hand was brought near the nest, the larger of the two birds raised the feathers on its back but did not attempt to peck.

The last observations were made when the young were 19 days old on July 19. Such activities as preening, beating the wings, and standing up in the nest were greatly increased. Both young were seen to pick at the nest and the branch immediately outside the nest. An increase in the frequency of feeding was also noted.

On the twenty-first day, when I came to weigh them, my observations were cut short, for as I reached my hand out to the nest, the young, without a moment's hesitation, flew directly from the nest with a speed and directness fairly equal to that of the adult birds. Due to dense foliage and a limited view from the blind, I was unable to follow their movements. Attempts were made later to locate them in the vicinity but without success.

#### ATTENTIVENESS

Apart from feeding periods, observations on attentiveness were limited to the first day. The female spent 86 minutes on the nest and 144 minutes off the nest or approximately 58 percent of the time on the nest. What would have been a normal tapering off

of attentiveness was disrupted by setting up the blind. The bird was never seen to brood afterwards, and the only time spent at the nest was during the actual feeding. The male was never seen to help in feeding the young nor was he seen anywhere near the nest or within the Station area.

#### FEEDING

The actual feeding was an interesting process. After making a few preliminary inspection flights around the blind, the parent would alight on the edge of the nest and sit quietly for half a minute. When ready, she stretched her neck, pointed her bill down more or less parallel with her body, and inserted its full length into the throat of the waiting youngster. Then mother and young moved their heads in unison with a rapid up and down motion. At the same time the youngster rotated its head about the axis of the female's bill. After about five seconds of this the bird would draw her bill partially out, and then pause another five seconds or so before slowly withdrawing her bill entirely. At no time was I able to see any food passing from one bird to the other. It is probable that the food was passed after the violent pumping during the slow withdrawal of the bill and at the pause preceding the complete withdrawal. The bird was never observed bringing any solid food to the young. They were apparently fed exclusively by regurgitation.

Most of the time each bird was fed twice in succession, although on several instances the two were fed alternately. The maximum number of feedings given to a bird at one visit was three. The total number of feedings by the female per visit ranged from one to five with four the most constant number. The feeding procedure was observed 22 times. The average interval between feedings was 51 minutes. The female had an interesting habit of extending and retracting her tongue

several times after each feeding. During the last week of nest life, the young also developed this habit.

#### INTERRELATIONSHIPS

A kingbird, robin, and a least flycatcher were known to be nesting within 150 feet of the study nest. Only one instance of friction between species was observed. A least flycatcher lit on the branch next to the nest and after a momentary pause reached over and pecked one of the young three times quite sharply about the head and then flew away. This might have been a chance happening near the nest and a more or less inquisitive pecking rather than a deliberate attempt to cause injury.

Because of its feeding habits, the ruby-throated hummingbird could not be considered to be in direct competition for feeding territory with any of the other birds common to the area.

#### SUMMARY

1. A nest of a ruby-throated hummingbird was observed over a period of 14 days.
2. The nest was located in a white birch in a second growth of deciduous trees.
3. Food supply was scant in the immediate area.
4. The male bird did not help with the care of the young, nor was he seen in the area.
5. Brooding which occupied 58 per cent of the female's time while at the nest was reduced to zero when a blind was set up.
6. The young were fed regurgitated food exclusively with an average interval between feedings of 51 minutes.
7. Total days of nesting life was 21.
8. No friction existed between the hummingbird and the other species nesting in the same territory.
9. Nestlings were attacked once by a least flycatcher.

Minneapolis, Minnesota

# Winter Bird Counts, 1943

*compiled by*

Arnold B. Erickson

During the last two weeks in December, 1943, forty-three members of the Minnesota Ornithologists' Union made observations on 59 species of birds totaling about 4557 individuals. Observations were made all the way from Grand Marais on the North Shore to Wells in Fillmore County.

**Minneapolis.** For the past five years the Minneapolis Bird Club has taken a winter bird count during Christmas week, always covering the same territory as the previous year, working both sides of the Mississippi River from Camden (North Minneapolis) to Anoka, about 20 miles upstream. This year the count was taken on December 18, from 9:00 a.m. to 5:30 p.m. The day was mild and sunny with no appreciable wind and no snow on the ground. Five persons participated in the count: Amy Chambers, Helen Towle, Ruth Linder, Audrey Webb, and John S. D. Clark.

Fourteen species of birds numbering 737 individuals were seen, as follows: mallard, 1; American golden-eye, 101; sparrow hawk, 1; ring-necked pheasant, 3; belted kingfisher, 1; hairy woodpecker, 2; downy woodpecker, 3; blue jay, 15; black-capped chickadee, 10; white-breasted nuthatch, 8; starling, 504; English sparrow, 75; cardinal, 4; and goldfinch, 9.

On the same day as the above five members of the Minneapolis Bird Club made their count and over the same area, five other bird students, Brother

Hubert Lewis, Brother J. Pius, J. Olson, J. Marshall, and E. Kirchner made a count. They recorded 12 species and 195 individuals. They saw two species, slate-colored junco (6) and tree sparrow (3) that were missed by the first group. They in turn failed to find the mallard, sparrow hawk, goldfinch, and starlings observed by the first party.

**Minneapolis.** Only two members of the Minnesota Bird Club, Gustav Swanson and W. J. Breckenridge, found time to make a Christmas count. They tramped through parts of southern Anoka County in the vicinity of Moore Lake, Laddie Lake, and Rice Creek west of Central Avenue, on December 30, from 9:00 a. m. to 5:00 p. m. They traveled 12 miles on foot and 14 by auto.

A total of 17 species and 541 individuals were seen: American golden-eye, 25; ring-necked pheasant, 3; short-eared owl, 1; hairy woodpecker, 4; downy woodpecker, 3; blue jay, 52; crow, 5; black-capped chickadee, 25; white-breasted nuthatch, 9; starling, 279; English sparrow, 65; red-winged blackbird, 2; redpoll, 57; goldfinch, 4; slate-colored junco, 2; tree sparrow, 3; and Lapland longspur, 2.

**Minneapolis.** The Minneapolis Audubon Society's winter bird count in Theodore Wirth Park (formerly Glenwood Park) was taken afoot on December 20, from 10:00 a. m. to 4:15 p. m. by Miss Lulu May Aler, Mrs. Francis S. Davidson, Mrs. E. H. Jensen, and

Mrs. William Ure. The day was fair; temperature, 19 degrees F. to 37 degrees F.; wind, S. W., 15 to 26 m. p. h. The ground was bare except for old snow patches so that it was possible to cover the evergreen nursery, a swamp, and several hillside coniferous woods as well as the feeding station, springs, and deciduous areas near paths. The 18 species seen, including 262 individuals, were as follows: sparrow hawk, 1; ring-necked pheasant, 13; barred owl, 1; hairy woodpecker, 1; downy woodpecker, 11; blue jay, 65; black-capped chickadee, 66; Hudsonian chickadee, 1 (one of the two seen repeatedly since discovery of the first by Mrs. Jensen on November 20); white-breasted nuthatch, 13; red-breasted nuthatch, 1; brown creeper, 8; golden-crowned kinglet, 7; English sparrow, 15; cardinal, 6; purple finch, 9; goldfinch, 11; slate-colored junco, 28; and tree sparrow, 5.

**Supplementary Winter Bird Report for Theodore Wirth Park**, submitted by Lulu May Aler. December 31, 1948. "Continued mild weather, easy walking conditions, and abundant bird life lured Mrs. Davidson, Mrs. Jensen, Miss Anna J. Johnson, Mrs. C. R. Nelson, and me to the park on December 31 for an impromptu final check-up. We were thrilled to find not only all of the 18 species seen on our official Audubon Society Count of December 20, but also two others for which we had looked in vain on that date—the evening grosbeak and the common redpoll. From one to three evening grosbeaks have been seen repeatedly near the springs along the boulevard since Mrs. Jensen's discovery of two in company with a pine grosbeak on November 17. On December 24, I saw a Bohemian waxwing with two evening grosbeaks preening after a Christmas Eve bathing party! I have no further reports on either the pine grosbeak or the waxwing. On November 18, Mrs. Davidson, Mrs. Thomp-

son, Mrs. Jensen, and I saw two hoary redpolls with several common redpolls near the feeding station.

"Other species noted in the park since the big early November snowfall (remnants of which still remain in the glens) and the latest dates of which I have a record are: Cooper's hawk, seen by Mrs. Jensen, December 10; red-tailed hawk, Mrs. Jensen, December 25; Wilson's snipe, Miss Aler, December 2; pileated woodpecker, Mrs. Lupient and Mrs. Jensen, November 22; crow, Mrs. Lupient, December 30; olive-backed thrush, Mrs. Davidson and Miss Aler, November 24; starling, Miss Aler, November 17; and rusty blackbird, Mrs. Jensen, November 17. This makes a total of 31 species recorded between the onset of winter weather and the year's end."

**Minneapolis.** On December 20, a bright sunny day with the temperature about 30 degrees F., Mrs. I. A. Lupient and Mrs. W. B. Young of Minneapolis and Mrs. R. T. Gammell of Kenmare, North Dakota, hiked about ten miles through deciduous woods along the north bank of the Minnesota River at Whiteford's, Bass Pond, Cedar Avenue bridge, and along both sides of the river near Lyndale Avenue, and along Nine Mile Creek to Bloomington. They saw 18 species totaling 871 individuals: red-tailed hawk, 1; marsh hawk, 1; pheasant, 1; red-bellied woodpecker, 2; hairy woodpecker, 9; downy woodpecker, 24; blue jay, 15; black-capped chickadee, 54; white-breasted nuthatch, 29; brown creeper, 13; starling, 10; English sparrow, 162; red-winged blackbird, 1; slate-colored junco, 15; cardinal, 4; purple finch, 3; goldfinch, 1; and tree sparrow, 25.

**St. Paul.** Brother Hubert Lewis made three separate bird counts on three days, December 21, 22, and 24. On December 22, a clear day with high winds and a temperature of 0 to -5 deg. F.,

he was out from 9:30 a. m. to 5:00 p. m. and hiked from Pig's Eye Island to St. Paul Park along the Mississippi. He counted 21 species of birds numbering 862 individuals: mallard, 150; black duck, 6; green-winged teal, 4; American golden-eye, 620 (estimated 2000); American merganser, 15; goshawk, 1; Cooper's hawk, 1; ring-necked pheasant, 15; coot, 2; Artic horned owl, 1; barred owl, 1; red-bellied woodpecker, 1; hairy woodpecker, 2; downy woodpecker, 5; blue jay, 3; crow, 3; black-capped chickadee, 20; white-breasted nuthatch, 4; robin, 2; starling, 4; and cardinal, 2.

On December 21, from 1:30 p. m. to 5:00 p. m., Brother Hubert saw 17 species including 3 Wilson's snipe, 2 great-horned owls, one belted kingfisher, 2 brown creepers, and 3 golden-crowned kinglets—birds not seen on the 22nd. On the 24th from 1:30 p. m. to 5:00 p. m., he saw 12 species, including one sparrow hawk, not seen on either of the other days.

**Duluth.** Hulda Adams, Elizabeth Graybeal, Mary I. Elwell, and Olga Lakela of the Duluth Bird Club conducted a series of ten bird counting expeditions from December 12 to January 9, at Minnesota Point, North Shore (as far as Two Harbors), Fond du Lac, Morgan Park, and Congdon Park. From December 12 until the 24th, the temperature averaged about 20 deg. F. and strong winds prevailed. From December 25 to January 9 the temperature averaged about 30 deg. F. and there was little wind. There was very little snow during both periods.

The largest number of species, 12, was seen on December 20, along the North Shore from Duluth to French River and return, by car and hiking. The list was as follows: American golden-eye, 26; ruffed grouse, 1; ring-necked pheasant, 3; herring gull, 163; great horned owl, 1; barred owl, 1;

hairy woodpecker, 1; downy woodpecker, 7; black-capped chickadee, 11; Hudsonian chickadee, 2; blue jay, 5; and pine grosbeak, 1.

A total of 26 species numbering 1002 individuals were counted during the period December 12 to January 9. They are as follows: American golden-eye, 231; buffle-head, 1; American merganser, 7; goshawk, 1; ruffed grouse, 7; ring-necked pheasant, 4; herring gull, 280; glaucous gull, 1; great horned owl, 2; barred owl, 1; snowy owl, 1; pileated woodpecker, 1; hairy woodpecker, 6; downy woodpecker, 42; blue jay, 10; raven, 2; black-capped chickadee, 50; Hudsonian chickadee, 2; red-breasted nuthatch, 2; Northern shrike, 5; starling, 96; English sparrow, 75; evening grosbeak, 11; pine grosbeak, 19; redpoll, 33; and snowbunting, 112.

Four students in the science class at the Duluth Teachers College reported bird observations from the following localities:

**Grand Rapids.** December 27. Ruffed grouse, 5; blue jay, 2; and black-capped chickadee, 4. Reported by Lillian Bruhn.

**McGregor, Aitkin County.** December 29. Pheasant, 11. Reported by Dorothy Porter

**Tamarack, Aitkin County.** December 20. Blue jay, 2; black-capped chickadee, 2; and pine grosbeak, 1. Reported by Lorraine Peterson.

**Grand Marais.** December 29. Herring gull, 15; downy woodpecker, 2; Canada jay, 1; and raven, 3. Reported by Esther Berntson.

**Duluth.** On December 24, James Feltin, age 9 years, the youngest member of the Duluth Bird Club spent three and a half hours in Chester Park where he saw two black-capped chickadees and three downy woodpeckers.

**Duluth.** Mrs. Walter C. Olin of the Lakeview Branch of the Duluth Bird Club submitted the following report:

"Birds were so scarce in Lester Park that we took two hikes in the park and one short one to Hunters Hill. From 2:30 to 4:30 p. m. on December 26th, Susan Lovald and I covered the territory at the mouth of Lester River and around Lester Park. The sky was overcast, temperature 32 deg. F., and no wind—an ideal day for birds. We saw 3 American golden-eyes, 18 herring gulls, 1 downy and 3 hairy woodpeckers; a total of 4 species, 25 individuals.

"January 1, was a clear, sunny day, temperature 30 deg. F. with a slight breeze. We were out from 10:15 a. m. to 1:15 p. m. covering about 6 miles on foot through Lester Park and up the River. This time we saw 4 downies, 4 blue jays, 8 chickadees, and 1 pine siskin; a total of 4 species and 17 individuals.

"Late in the afternoon of January 2, Catherine Lieske and I spent an hour on Hunters Hill and saw 4 ruffed grouse, 2 black-capped chickadees, 2 white-breasted nuthatches, 1 pileated woodpecker, and heard at least 2 pine grosbeaks."

St. Cloud. The St. Cloud Bird Club, seven members participating, made its bird count on December 29, from 2:00 to 5:00 p. m. on the Teachers College Islands in the Mississippi River and along the river, four miles afoot and eight miles by auto. The temperature was 35 deg. F. and the afternoon windless. Only nine species numbering 115 individuals were seen: American merganser, 7; ring-necked pheasant, 10; barred-owl, 2; downy woodpecker, 5; blue jay, 2; black-capped chickadee, 16; white-breasted nuthatch, 2; redpoll, 19; and English sparrow, 52.

Wells. Miss Julia Grebin, a member of the St. Cloud Bird Club, made her count at Wells in the Root River Valley

in Fillmore County. She reported the following species: marsh hawk, 2; barred owl, 1; pileated woodpecker, 1; downy woodpecker, 1; blue jay, 1; black-capped chickadee, 6; white-breasted nuthatch, 2; cardinal, 2; slate-colored junco, 12; and tree sparrow, 7.

Stewartville. Dr. Alden F. Risser, long-time member of the Minnesota Bird Club, sent the following report of his observations.

"I have been too busy to take any bird hikes, but I saw a few unusual birds the morning of December 22, so I decided to keep a list of all the birds I saw that day as I was driving around the country on my sick calls. With the present shortage of doctors and prevalence of sickness, I am more than usually busy. I only get to my office about every other day, and then not until after four or five o'clock.

"My list for December 22 follows: rough-legged hawk, 2; short-eared owl, 2 (the two were five miles apart); hairy woodpecker, 1; downy woodpecker, 1; red-headed woodpecker, 1; blue jay, 8; crow, 11; tufted titmouse, 1 (at feeding station of Mr. and Mrs. G. A. Risser - my parents. Also seen later at our own feeding station); black-capped chickadee, 7; white-breasted nuthatch, 3; brown creeper, 1; golden-crowned kinglet, 2; cardinal, 1; redpoll, 15; and slate-colored junco, 14. Total, 15 species; 69 individuals.

"Other birds I have seen here during Christmas week were: two sparrow hawks; numerous starlings; goldfinches; a marsh hawk; two red-tailed hawks; a kingfisher; one pheasant; a bronzed grackle, and a Lapland longspur. These were also seen during my rounds of country driving."

Minneapolis, Minnesota

## NOTES OF INTEREST

REPEATED NESTING OF THE RED-SHOULDERED HAWK NEAR ROCHESTER—I have been interested for some time in the account given in *THE BIRDS OF MINNESOTA* of the status of the Red-Shouldered Hawk in our state. In it it is stated that it is an exceedingly rare resident. In this connection I thought the following observations I have made of this bird in the past six years might be of interest.

1938. During the summer a pair of red-shouldered hawks were frequently observed about Mayowood pond (the home of Dr. C. W. Mayo 3 miles west of Rochester). At that time I was not aware of the fact that this might be a rare bird here. In my Eastern home (Pennsylvania) it is in many areas commoner than the red-tail, and I took its presence as a matter of course. I have been familiar with the bird most of my life, and in hawk flights at Cape May and Hawk Mountain, Pennsylvania, have seen it in season in relatively enormous numbers.

1939. April 18 a pair of these birds was observed nesting in a cottonwood thicket in the bottomland one-half mile north of Mayowood pond. The nest was about 50 feet up in a willow. From the actions of the birds I thought they might be feeding young. I did not have enough opportunity to get out very often that spring, so I have no further information about them.

1940. None seen.

1941, 42, 43. A pair of red-shoulders occupied the same tree or one near it during April and May each year. The scream of this hawk is as a matter of fact one of the common and dominant sounds of this part of the Zumbro River Valley each spring. I have never seen the birds before about April 10, but my records with regard to arrival dates are quite worthless because of the infrequency with which I get outdoors.

I have never actually seen into the nest but have ascertained its location each year and have observed the birds on or near it. On several occasions, especially during May, the hawks have stooped at me as I came near the nest which I have always taken to mean that young were present. These adventures were less exciting than they sound, however, for the birds never approached closer than 20-30 feet, in contrast to ospreys with which I have a long and much more intimate association.

Sunday (April 3, 1944) I saw the birds again for the first time this year. The circumstance was interesting because I located them by their screaming and found them bedeviling a pair of great horned owls, which sport was soon taken up by all the jays and crows in the vicinity. I observed the birds three times during the week, including today, and it is obvious from the location they frequent that their territory is the same as it has always been. I haven't yet had an opportunity of

locating their nesting tree. The one they used in other years has disappeared and apparently must have fallen, although I cannot identify it with certainty.

Thus I am certain that I have had nesting red-shouldered hawks here five out of the past six seasons and every evidence indicates they are back for the sixth. If past indications are valid, I can promise to show the birds to anyone who comes by, as I have done in the past, for they stick pretty close to home, and are so noisy that it is usually an easy manner to locate them whenever I invade the locality they inhabit. Dr. F. R. Keating, Jr., Rochester, Minn.

Note. In regard to the red-shouldered hawk in Minnesota. The account in the first edition of *THE BIRDS OF MINNESOTA*, to which Dr. Keating refers, tells the tale up to the time of writing, about 1930. But in the appendix of the second edition, 1936, the record is quite different. During the intervening years, more and more information about this hawk has accumulated. It is now to be considered as a regular summer resident and some, if not all, remain all winter. It is one of a group of species that have come into the state by way of the Mississippi River Valley and spread over the state. The nest has been found as far north as St. Cloud (Nestor Heimez, 1935). Thos. S. Roberts.

CANADA GEESE WINTERING AT MAYOWOOD, ROCHESTER—The Zumbro River flows through the estate of the late Dr. Charles H. Mayo. Under normal conditions it is not a large stream but like all the water courses of southeastern Minnesota, it is subject to times of high water when it overflows its banks and becomes a violent, destructive stream. After several unsuccessful attempts, Dr. Mayo finally constructed a substantial dam which impounded the water and created a permanent pond or small lake which was made attractive by various artificial devices. In the absence of lakes in the surrounding country, this appealed to migrating waterfowl, lured by the presence of captive birds. Canada geese or Honkers seemed especially to favor it, and now for a number of years they have been dropping in here in the fall in increasing numbers and, with the added inducement of corn supplied from the farms, have remained through the winter. After Dr. Charley's death, his son, Dr. Charles W. Mayo, now away in the army, continued feeding the geese. They are still coming and being cared for to some extent as shown by the following account in a recent letter by Dr. Keating of the clinic. Thos. S. Roberts.

With regard to the geese at Mayowood this winter, I observed them on a number of occasions, and so far as I could tell, the overwhelming majority were always Canada geese, although twice during the fall I saw small family groups, numbering perhaps a dozen birds, which were obviously smaller and could well have been Lessers. The count of the geese at Mayowood during the fall varied from 1,500 to 3,000 birds. I am not sure how many actually were wintering on the pond the whole time because the numbers varied a good bit. Apparently they range far and wide throughout the county, foraging in corn fields. Unless one catches the flocks at dusk when they are returning, it is very hard to make an accurate count. I believe in the tradition established by Doctor Charlie the folks at Mayowood have continued to put out some feed for them, but it is my impression that the birds forage for themselves much of the time. Dr. F. R. Keating, Jr., Rochester, Minn.

CONFIDING CHICKADEES AND NUTHATCHES—While visiting St. John's University, Collegeville, Minnesota, on January 13, 1944, I witnessed, about one-

half mile southwest of the buildings a very interesting sight. Here in the fine woods, in which a heavy growth of large planted pine dominates, Rev. Sylvester Harter, O. S. B., showed me his winter feeding spots for wild birds. The day was quite windy, cold and somewhat overcast, hence not such a favorable and favorite day with the birds according to Rev. Harter. Besides, we had just seen a hawk dash through the branches; yet, on our arrival at the favorite spot, we were fairly surrounded by some 50 bouncing and dashing birds, eagerly snapping up cut-up, roasted peanuts from our hands—although I had only a fraction of customers. To me it was quite impossible to count these fellows, yet there were here feeding at least 20 chickadees, 8 red-breasted and 4 white-breasted nuthatches, and one male three-toed woodpecker. This last did not feed, although he came very close. Rev. Harter told me he comes at other times.

As we were returning to the college after some 30 minutes of this excitement, these birds followed us, taking peanuts from our outstretched hands as we walked along. Rev. Harter assures me there are many more chickadees in this wood and at least 18 red-breasted nuthatches. At the feeding spot just described I saw the white-breasted nuthatches waiting on branches and dashing out to catch in mid-air, peanuts tossed to them, missing some two out of five times.

I also saw an interesting trick the white-breasted nuthatches play on one another, and quite often according to Rev. Harter. He had thrown a peanut near a tree with two nuthatches—I'll call them Tom and Jerry—watching from a branch four feet away. As the more nimble footed Tom jumped to the ground some 12 inches from the desired morsel, the more nimble-minded Jerry uttered a peculiar danger call, which made Tom hesitate a second—just long enough for Jerry to dash down to scoop up the morsel from under Tom's very nose.

Rev. Harter feeds the birds about the building only during the winter months, suet and peanuts being the main offerings. I saw several boxes or feeding trays outside some four room windows of other Fathers. The chickadees at St. John's will come to almost every outstretched hand hoping to find food. Rev. Hyacinth J. Cismowski, Holy Name Church, Wayzata, Minn.

**BIRDS SEEN ONE DAY IN MIDDLE MAY**—Dr. Thomas S. Roberts states in *The Birds of Minnesota*, when referring to the bird student in the field in May, "The observer who wishes to make a record list of birds for a single day usually chooses one in the middle of that month, and at this time a list of a hundred species is not impossible."

Eight members of a nature group of the Women's Club, provided with their lunch, met at the Lyndale Park Bird Refuge north of Lake Harriet at 9:30 on the morning of Thursday May 14, 1942. While it was cold and there were occasional showers, our enthusiasm was at its height as we soon realized it was to be a record day for us; a wave, not only of warblers, but of all birds was moving northward. Such colorful birds as the scarlet tanager, cardinal, rose-breasted grosbeak, indigo bunting, and goldfinch were seen or heard around us, at the same time

Of the flycatcher family we recorded the kingbird, crested flycatcher, yellow-bellied, alder, least, olive-sided, and wood pewee.

We saw all five of the thrushes, the wood thrush, hermit, olive-backed, gray-cheeked, and willow (veery).

All the vireos on our field list were checked, the yellow-throated vireo, blue-headed, red-eyed, Philadelphia, and warbling.

It was my record day for warblers, as we saw twenty-five different warblers and many duplicates of some.

Of the sparrows only the following were seen: chipping sparrow, clay-colored, Harris, white-crowned, white-throated, Lincoln's, swamp, and song.

We were not out to see how long a list we could record, but to enjoy the freedom from household cares, and the bliss of being out doors with the birds. We were out only seven and a half hours, and saw 91 different species.

A number of common permanent residents and summer residents, possibly busy with their nesting duties, were not seen or we might have had a list of a hundred species easily.

The regular Tuesday walk of the Audubon Society taken that week, on Tuesday May 12, was another fine record day. Sixty-eight species were seen in this same area in the morning only. In the afternoon a tour of inspection was made by automobile of some ponds a few miles south of Minneapolis on Penn and France Avenues, which swelled their list for the day to 92 different species. Mrs. Rollo H. Wells, Minneapolis, Minnesota.

NOTES ON FALL DRUMMING OF RUFFED GROUSE AND DISTRIBUTION OF SPRUCE GROUSE—The drumming of a ruffed grouse was heard at 11 a. m. on October 1, 1943, near Big Fork. On October 16, 1943, a grouse was heard drumming along the Gooseberry river, north of Castle Danger. The sound was heard at repeated intervals from 7 p. m. to 5 a. m. on a cool, moonlit night.

The following records give some indication of the distribution of spruce grouse in Minnesota:

Aug. 6, 1943 - 3 seen near Mink Lake, northwest of Grand Marais.

Aug. 7, 1943 - 1 seen between Soudan and Cook.

Nov. 22, 1943 - 2 seen 26 miles south of Ely.

Jan. 13, 1944 - 1 seen 21 miles south of Ely.

Nov. 23, 1943 - 5 reported by hunters 25 miles south of Ely.

Feb. 18, 1944 - 1 dead bird found along road near Margie, south of Big Falls.

Feb. 19, 1944 - 2 coveys reported north of Chisholm.

Mar. 9, 1944 - 1 seen 10 miles north of Ely.

Bernard A. Nelson, Minnesota Division Game and Fish, St. Paul, Minn.

NOTES FROM CLOQUET—April 29. Early this morning seven members of the Cloquet Bird Club spent delightful hours beside the St. Louis River and in the bordering woodlands. Of the 22 species of birds that we identified the following were the ones which pleased us most.

White-throated sparrows on all sides of us seemed to be expressing their zest for life in a song which is characteristically joyous; yet appealing. A black and white warbler came almost within hand reach and was as friendly as any chickadee. Golden-eye ducks "whistled" overhead; flickers called in the distance; a kingfisher scolded us mightily for intruding; a fox sparrow flashed his rusty tail at us from a bush; and immaculate tree swallows darted about playfully over the river in contrast to the majestic soaring of a broad winged hawk above the woodland. Finally, when we had seen and heard a ruby-crowned kinglet in a spruce grove we were satisfied to take the homeward path.

April 30. Destination ducks! This time our group set out for a bay of Thompson Lake, near Carlton, which is one of the best spots for ducks in the region. Although swampland underfoot and rain from above made us long for duck like indifference to water, we were amply rewarded for the trip. Ringneck, shoveller, baldpate, bufflehead, lesser scaup, blue-winged teal, and a pied-billed grebe were identified readily. It was somehow a surprise and a thrill to find live ducks identical to the pictures we had studied so earnestly at our winter meetings.

On the return trip we added to our list a marsh hawk, a pair of horned grebes, and also a flock of 40 cowbirds feeding beside the road. Ellen Wilson, Cloquet, Minnesota.

**PILEATED WOODPECKERS**—The pileated woodpecker is in my opinion increasing in numbers. I have seen two from my home (Rochester) this spring, and that is well inside the city area and a mile from the nearest wooded tract which harbors a pair. I have four pairs tentatively located between here and Mayowood but have not yet had time to locate their nests. It is a source of frequent surprise to me to realize how few persons in this area have ever seen these spectacular birds, which are relatively so common. I suspect this can be simply explained by their wariness. I never see one except by accident, as when it flies across my line of sight in the open, excepting by first hearing them and cautiously approaching the sound, and even then seldom get within 50 yards of them. This behavior is in sharp contrast to that of the pileateds I met at Flour Lake, on the Gunflint Trail in 1941. There, I camped about 30 feet from a nesting hole and had the pleasure of having four of the birds flying and feeding unconcernedly about our camp for two days, showing no more concern over our presence than one would expect of a downy. Dr. F. R. Keating, Jr., Rochester, Minnesota.

**A SIMPLE SUET HOLDER**—The following materials are used in making this very simple and satisfactory suet holder: a block of wood one inch thick, seven inches long, and four inches wide, and a piece of quarter-inch mesh hardware cloth approximately three inches wider and one and one-half inches longer than the wood block.

First with tinner's snips remove all roughness from one of the shorter edges of the cloth to form the top of the holder. Next using the block of wood as a guide bend about one and one-half inches of the sides and bottom of the cloth to right angles with the remainder. Snip out a small rectangle in each corner of the cloth to make it fit smoothly to the block.

Then, with staples fasten the cloth to the sides and bottom of the block, lapping it about half the thickness of the wood. This forms a box or patch pocket open at the top and about seven by four by one inch having a back of wood and a front, two sides, and a bottom of mesh.

Now drive screw-eyes into the top and bottom of the block, and hang the holder on a hook that has been screwed into a tree. Drive a nail through the lower screw-eye into the tree far enough so that the holder will not swing sideways and yet may easily be lifted off.

All metal parts of the holder should be thoroughly coated with melted paraffine to prevent any damage should a bird get an eye or tongue against them in very cold weather.

Suet sliced to the proper thickness and placed in a holder regularly attracted the following visitors to my visiting station: downy, hairy and red-bellied woodpeckers, white-breasted nuthatches and black-capped chickadees. Once a pileated woodpecker was seen at the feeder. English sparrows and blue jays were rarely successful in getting the suet; gray squirrels, never. The holder is too deep and narrow for a squirrel to get his muzzle into. Sadah W. Field, R. F. D. Holdridge, Wayzata, Minnesota.

**OBSERVATIONS ON PILEATED AND 3-TOED WOODPECKERS**—Judging from sight records and observation of their characteristic diggings in stumps and snags, pileated woodpeckers are well distributed and fairly common in northeastern Minnesota. Observations frequently were not recorded, but my notes do contain the following records:

Oct. 30, 1943 - 2 seen near Idington, Minn.

Feb. 18, 1944 - Diggings seen near Little Fork.

March 3, 1944 - Diggings seen near Floodwood.

March 9, 1944 - 3 seen near Nels Lake, north of Ely.

March 17, 1944 - 1 seen near Orr.

An Artic 3-toed woodpecker was seen north of Lake Vermillion on January 11, 1944. It was working on the top of a small birch stub, and was so unconcerned about my presence that I was able to stand at the base of the stub and observe it. Rapping on the stub with a stick did not disturb the bird, which kept on with its work for a couple minutes before flying away. Bernard A. Nelson, Minnesota Division of Game and Fish, St. Paul, Minn.

**MIGRATING GEESE ON THE MISSISSIPPI**—On April 10, as we were driving the beautiful river-road between Kellogg and Wabasha, we saw a pair of exquisite wood ducks. A few minutes later we stopped the car again to use the bird-glasses to get a better look at a pair of shovellers and some scaups. Between the highway and the main channel of the Mississippi there were, at this place, many acres of marshy land. Far out near the main channel we saw what at first we thought to be chunks of floating ice, but the clamorous honking which reached our ears soon convinced us that we had discovered hundreds of wild geese. When we got our glasses on them, we were able to distinguish the snow geese by their black-tipped wings and the Canada geese by their dark heads. We suspected that in the great flock there were blue geese, which so frequently associate with snow geese and possibly white-fronted geese; but because of the distance, we could not be sure. They were not moving about much, but occasionally groups of them would rise, fly about, and light again. The air was filled with the din of their honking. We could see how magnificent they were, especially those walking about on a small island on the near side of the river. We wished we might watch them and listen to their stirring calls all afternoon, but we were already late for an appointment in St. Paul. Alice Zimmerman, Cloquet, Minnesota.

**MARTIN HOUSES, THEIR PROPORTIONS AND LOCATIONS**—Government specifications for martin house apartments are 6 by 6 by 6 inches. One we purchased in 1938 averaged about two-thirds that size. It was built of quarter inch material, and had two upper compartments where there should have been an attic. When upper compartments are small, nestlings frequently suffocate from the heat. In 1938, two of 14 broods suffocated in houses at our summer home, Hilltop Acres, at Cass Lake. In 1939, 5 out of 14 broods suffocated.

In the spring of 1940, we chanced upon an article in a 1929 "Better Homes and Gardens". The article featured the fact that the martin is an eight-inch bird and should have eight inch living quarters. Other advocated prerequisites were one inch lumber, four inch cat walks for each floor of houses, a well ventilated attic to carry off the heat, two or three ventilation holes on all inside walls between apartments, and two or three such ventilation holes on all outside apartment walls not having a two and one-half inch entrance.

Adhering to these directions, we have built 6 martin houses of 16, 12, 12, 14, 17 and 24 apartments each. We had to content ourselves with three-fourths inch material, and at times where width of lumber so affected the spacing, we had to make the height of the apartment seven inches. Two other houses of 16 apartments each were designed as round towers from cheese containers. These homes could not be made to the exact proportions of 8 by 8 inches, but the coating material used for sides and roof was an insulated one. It was made of 3 parts asbestos cement and one part regular cement, with enough water to mix. This kept the houses cool, and the four inch cat walks saved any over-crowded young from falling to the ground.

We have customarily used a 12 to 14 foot pole to set our martin houses on. Location of the house, we have found, is important in attracting birds. The second house we built was placed in an opening which had only a 60 foot radius. The first year (1942) martins swarmed around it, but the final count showed that only three of 12 compartments were used. The second year was even worse. The same three apartments were taken, but one was deserted just after the nest was completed. Late in August that same year the house was moved out to the south line with the other martin houses and placed with five others that had wide approaches from over the meadow. In 1943 all apartments of the house in question were taken.

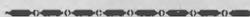
In 1943 also, the two insulated round houses were used for the first time. One of the round houses was better for roosting on than the other, because a small cedar support protruded through its top and dead cedar branches were attached to it. This house was located to the southwest of our acreage, with a background of white birch and an old oak close by. Three pairs appeared to have taken up quarters, but they left very early. The other round house, exactly like the first, but minus the dead cedar branches, was placed not too far from the house that was moved to a more exposed situation in August, 1942. This second round house had 14 of the 16 apartments taken the first summer.

Building our houses according to the 8 by 8 by 8 specifications, we have in four summers attracted a colony of 100 pair of nesting martins. We have increased the number of houses and apartments each year since 1940 as follows: 1940, one house with 16; 1941, four houses with 54; 1942, six houses with 95; 1943, eight houses with 127. We have started the 1944 season with eight houses. Mrs. P. A. Becker, Hilltop Acres, Star Route, Walker, Minnesota.

**GOSHAWK ATTACKS DECOY**—While hunting ducks on Lake Leander in early November last year, I was startled to see an eastern goshawk swoop down and pick up one of my decoys. With the anchor trailing out behind, the decoy was carried a distance of 70 feet to shore, where the hawk landed and stood beside it. In order to save the decoy, which was hollow and made of some paper composition, I shot the hawk, so I did not have a chance to find out how long it would take him to discover his mistake or what his reaction would be. The decoy and anchor

combined weighed three-fourths of a pound, a weight which the goshawk managed with ease. Examination of the stomach of the goshawk revealed the remains of a ruffed grouse. Goshawks have been seen rather frequently throughout the past winter in northeastern Minnesota. Bernard A. Nelson, Division of Game and Fish, St. Paul, Minnesota.

FLIGHT SPEED OF SNOW BUNTING—On October 24, 1943, in the Lake Vermillion area, I clocked a snow bunting at 20 m. p. h. as it flew ahead of the car. In December I again had an opportunity to check the flight speed of a snow bunting and found it to be flying at a speed of 26 miles per hour. Bernard A. Nelson, Division of Game and Fish, St. Paul, Minnesota.



*Members of the M.O.U. are urged to collect information on the nesting activities of birds again this spring and summer. When rather detailed observations are made on one or several nests, over a period of time, the information obtained should be worked up as notes or articles for publication in THE FLICKER whenever possible. Nesting data should be sent to the editor at the Minnesota Museum of Natural History, University of Minnesota, by October 15, '44.*



*All of the officers of the M.O.U. who served during 1943-44, were reelected to office for the years 1944-45. They are as follows:  
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## The Flicker

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Minneapolis, Minnesota

# THE FLICKER

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## Early Rambles of a Bird Lover in Minnesota

by

Thomas S. Roberts

Just when the writer became a "bird-lover" is not quite clear. It must have taken definite form sometime between the ages of 12 and 15. Whether or not there was any external stimulus or whether it just happened, like Topsy, it is now too late to determine. Perhaps some latent or developing interest was aroused and fostered by an early acquaintance with a Mr. W. L. Tiffany, a gentleman who played a part in the infant milling industry of the city. He was a friend of Mr. Wm. H. Dunwoody who was a friend of my father, and this led to a mutual acquaintance that developed into an intimacy and companionship which continued for several years. Mr. Tiffany was a large, rugged man, adorned with a big mustache and goatee, possessed of a loud voice and hearty manner, and was usually so engrossed in the subject at hand that he was entirely oblivious to all else. He was a thorough out-of-door man, fond of hunting and fishing, and had come from the shores of New Jersey where,

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*This paper was written a number of years ago at the request of certain members of the Minneapolis Audubon Society and read before the society.*

he was wont to say, he had been a "longshoreman." But he was well-read, had traveled extensively, and associated with literary and artistic people, and was withal an interesting and stimulating personality though generally considered a bit odd by the ordinary run of folk, which is the usual fate of a man or woman with a "hobby." Before we knew him he had become associated with Dr. P. L. Hatch, the father of Minnesota ornithology, in his earlier bird studies, and together they worked out the many problems that came up frequently in those days of few books and scattered writings. Tiffany had known Spencer F. Baird, Director of the Smithsonian Institution, and was the happy possessor of one or two Pacific Railroad Survey publications on birds. An anecdote of the time that used to be told on these two birdmen illustrates the single-mindedness and enthusiasm of at least one of them when interest ran high. An unknown bird, which neither could place, had been taken on Saturday afternoon. The following morning Mr. Tiffany, having run down the stranger, searched the town for the Doctor and at last located him in his accustomed pew at church

ing daunted, the excited Tiffany rushed up the middle aisle and, seizing the as-listening to the morning sermon. Not-tonished Doctor by the shoulder, said in a loud stage whisper "Come, come out. I've found it." Having known the man, I can believe it really happened. Such total absence of self-consciousness is to be envied.

It is more than likely that the kindly interest of such a man over a series of years had a strong influence on a growing boy who already had a sympathetic bias, due, in part at least, to living constantly in the open with an invalid father. At all events it was a great help to be able to go to this friendly man and his co-worker, Dr. Hatch, to check up on new "finds" and talk things over. Dr. P. L. Hatch was the leading homeopathic physician of those early days, was the recognized bird authority and the official state ornithologist of Minnesota. He came to Minneapolis in May, 1858, from western New York, already interested in birds, and had the wonderful experience of witnessing the bird-life of the region in almost its pristine condition. He was a most enthusiastic student and lover of birds, going much a-field armed usually with field glasses rather than with a gun. He would drop everything, even his professional work, to engage in a rapturous bird talk. I have known him when called to see a patient who was a bird-lover, to talk birds for an hour or more, and leave without once referring to the subject of the visit! Perhaps if more doctors would do this it would be quite as helpful as the neglected physio. Unfortunately Dr. Hatch, in spite of his calling, was not possessed of a scientific mind or orderly habits of assembling and preserving information. He made no permanent collections and apparently kept no notes or records as none could be found after his death. He was credulous to an ex-

treme and believed all that was told him even when it did not fit in with current knowledge. Thus his first list of the birds of Minnesota, published in 1874, and subsequent annual reports to the Minnesota Academy of Natural Sciences, while they were surprisingly full for the time, contained many inaccuracies that might have been avoided. And when, much later, he prepared a volume to be printed as a "Report on the Ornithology of Minnesota," the lack of manuscript records caused many of the biographies to be little more than fading memories of the past. When it comes to scientific book making, enthusiasm and credulity will not take the place of recorded observations, carefully sifted data, and a knowledge of previous publications on the subject. But much valuable information may be culled from the well-phrased writings of Dr. Hatch, and, while he was not one of those cold-blooded, critical, doubting mentors who must be shown things, he was a genial, warm-hearted nature-lover whom all of us, who knew him well, liked and honored. It is to be regretted, however, that it was not within his power to put accurately on record experiences that were his alone, never to be repeated.

On February 12, 1875, a group of seven high school boys formed themselves into a nature study club with the rather presumptuous name of "The Young Naturalists," and met frequently for three years thereafter. Each was interested in some phase of natural history, and the association was a stimulating one. Papers were read and records kept. The annotated list of some six hundred species of plants was later incorporated in Warren Upham's "List of Minnesota Plants." One of the members, Clarence L. Herrick, was a talented young man who, in after years, did much valuable scientific work along several lines, and during the last ten

years of his life, while afflicted with pulmonary tuberculosis, organized and served as President of the University of New Mexico, dying while still in the service of that institution. Robert S. Williams, another member, primarily a bird student, was for many years the moss expert of the Bronx Botanical Gardens, New York City. Leon E. Lum, the faithful secretary and general all-around helper, recently died at his summer home near Brainerd, after having been a prominent attorney at Duluth for many years.

The Minnesota Academy of Natural Sciences was organized in 1873, and we boys were always made welcome at its monthly meetings. Perhaps some of the earlier papers on "The Antiquity of Man," "Did Life Originate by Law," and so on, were somewhat academic and ponderous for youngsters interested in birds, eggs, and flowers, but still there was a sense of being in august company that was inspiring and helpful at this impressionable age. Prof. N. H. Winchell was an active member, and as State Geologist always presented matters of interest. He was a man of great personal energy and enthusiasm, and always had an encouraging word for any and all beginners in natural science studies. Dr. Hatch was a regular attendant and his earlier papers were presented at the Academy and may be found in the published Bulletins.

In June, 1874, there came to Minneapolis on a collecting trip a young man—Mr. Franklin Benner—from New York City, who had had contact with eastern scientists and who was versed in the details of making collections. From him the writer learned the art of making bird skins and preserving birds' eggs, and from that time a private collection of bird skins and birds' eggs rapidly took shape. This collection became in after years the nucleus of

the present study collection of the Minnesota Museum of Natural History, the maker little dreaming that they would be handled and pondered over by successive groups of University students and Audubon Society members. Collecting and preserving specimens, as was done by every bird student of those early days, is the only way of laying a safe and permanent foundation for accurate records.

And now, having pictured something of the human background and environment of those early days in respect to nature study, we may turn to a brief survey of the natural conditions as they then existed in these parts. It was in the fall of 1867 that the writer came to Minneapolis, a boy of nine years. From that date until 1874 no written record was kept, but a fairly good memory still keeps alive many of the conditions and incidents of even that early period. When not in school, almost the entire time was spent in exploring the woods, fields and lakes, which were then near at hand, in company with a companionable father who had been ordered to live out of doors and who had come to Minnesota for that purpose. A patient horse, an open buggy, an old muzzle-loading gun, a friendly shepherd dog, and the man and the boy completed the outfit that went afield on all possible occasions. Game was plentiful and near at hand, and needless to say the boy had an ideal existence such as it would be difficult to duplicate today. Minneapolis was little more than a village, with St. Anthony on the opposite side of the river. The falls were in their primitive condition, and on quiet evenings the roar of the falling water could be heard throughout the town. The old government suspension bridge hung low over the river at the foot of Hennepin Avenue, and Nicollet Island was a wild beauty-spot and good collecting ground. Bridge

Square was full of oak trees and was the place where farmers gathered with their loads of hay, wood, and grain, and waited and visited until purchasers came. The streets were deep in mud or dry, as the weather determined. Nicollet, below Fourth, and Washington Avenues were the business streets. Hennepin beyond Seventh Street still contained portions of the original prairie sod, and rail fences still inclosed certain undivided areas. Dwellings of New England type straggled along out Hennepin to about Twelfth Street. The oak woods that is now Loring Park was in the country, and the lake nearby, now largely artificial, was deep, spring-fed, and full of fish of many kinds. It had a considerable outlet—deep enough for bass and pickerel to come and go—which crossed Hennepin, the old territorial road, about where Harmon Place now joins that avenue. This stream ran into a weedy lake which, with the surrounding meadow, occupied most of the present Parade Ground. Ducks bred here and in 1877 it was still a meadow and at least one pair of Le Conte's sparrows nested there which, with most of the young, are now in the Museum collection. "The Bluffs," as they were called, lay just beyond this low land. They were rough and much broken, densely wooded in the hollows, and, in the minds of the school children of those days, harbored many fearsome wild creatures—perhaps even Indians, who in the recent past had created such a terror in the state. Hennepin Avenue, a narrow trail, went steeply up the Bluff about where it is now, having been then but recently straightened from a winding course through the thick woods. Over the Bluffs the road wandered across open prairie with good duck ponds on either side, past two or three low one-storied farm houses to what is now called Lake Street, where the hinderlands began in which deer still lived and hunt-

ing was good. As one reached the crest of the Bluffs a glimpse could be had of an open lake, called Powderhorn Lake, which lay where Lyndale Avenue now runs between Franklin and 24th Street. This was a good duck lake, and the boys caught sunfish and bullheads. No one would ever suspect today that the streets and houses are over an old lake bed.

Horseshoe Lake (now Brownie Lake), Cedar Lake, Lake of the Isles, Calhoun, and Harriet were almost as they were made --- beautiful, clear-water lakes--full of black bass and other fish, and the resort of myriads of ducks both nesting and migrating. The causeway between Calhoun and Lake of the Isles was a good "duck pass"--better than most of those in the state today.

The woods on the west and south of Lake Calhoun were little disturbed, except for the small openings overgrown with sumach marking the sites of the Indian villages of former years. On the high bluff to the east of Calhoun were numerous shallow depressions and many sumach, indicating the spot where was located a Sioux village and the cabin and farm of the Pond brothers in the middle 30's. Similar evidences of the larger settlement and the Mission of the late 30's still existed at the north end of Lake Harriet.

Between Calhoun and Harriet ran a good-sized stream bordered by tamarack, which was excellent birding-ground and a favorite haunt of the few bird students of that time who got so far afield. Here the writer made many new acquaintances and secured many specimens.

Unknown to the writer at that time, a noted nature student and now celebrated author had roamed through these same Calhoun-Harriet woods not very many years earlier. The early road around the south shore of Calhoun just as it left the lake climbed a gentle

hill and then turned abruptly toward Harriet. Right at that angle, about where the Ueland home now stands, was a small white house behind a picket fence. Here lived a family named Hamilton, and here Henry Thoreau spent a brief period in early June, 1861, and searched the country about and between the lakes for flowers and birds. He visited the swamp between Calhoun and Harriet, circled the lakes including Lake of the Isles and made a list of the plants and birds, including several passenger pigeons' nests. The detailed journal records that he made here and throughout his stay in Minnesota were never elaborated into book form as he intended but have been published in somewhat garbled form and the original journal is preserved in The Henry E. Huntington Library in San Marino, California. Years later on perusing Thoreau's journal and noting the familiar names of places where he had found and described birds' nests and rare flowers, it added a new and thrilling interest to the old scenes to realize that I had been following closely in the footsteps of the illustrious poet-naturalist.

It may be of interest to state that the woods about Calhoun and Harriet were still the home of many deer. They lived and bred there and were not finally driven out until 1874 and 1875, when a man living down near Minnehaha, armed with a rifle and aided by hounds, killed 17 deer in this limited area and so exterminated, for good and all, the Calhoun-Harriet band of deer. The present Minnekahda Golf links and the lowlands lying south and east were the chief dwelling places, and many a deer have I chased through that now thickly populated district.

Out where Bryn Mawr stands today was a wonderful tamarack swamp, reached by a trail through the woods that ran about where Hawthorne Ave-

nue is located. It was a paradise for birds, especially warblers, and a place where many interesting plants could be found, difficult to locate today.

The Fort Snelling Reservation and where Shoreham is today were almost virgin prairie and the summer homes of hundreds of pairs of upland plover, or, as we called them then, Bartramian tattlers. The latter locality was known as Sandy Lake Prairie and was the favorite hunting-ground for this bird. Until the middle 70's large numbers were killed there every year, usually in July and August. They were excellent eating and so were much sought after.

The Steel and Machinery Plant in South Minneapolis stands right in the midst of what was the chosen feeding and resting place of thousands of golden plover that came each spring and fall until the early 70's. While the plover were here they received the same deadly welcome that they encountered everywhere during their travels in settled lands.

The Lake Johanna and Lake Amelia (Nokomis) regions were little altered, and the oak woods that adjoined them were the resorts of myriads of passenger pigeons that arrived every April and settled there to feed on the acorns.

Minnehaha was a beauty-spot, and the glen below secluded and full of interesting birds and flowers. Except by a few fishermen who came to fish in the pool down near the river, it was rarely invaded below the old grist mill, long since gone. Here I found my first and only blue-winged warbler, and discovered a nest of the golden-winged warbler.

When the writer first visited Lake Minnetonka, about 1869, a single small, stern-wheeled, flat-bottomed steam boat was making laborious trips daily be-

tween Wayzata and Excelsior, for these villages were in existence at that early date. The shores of the lake had been little disturbed and the upper lake was wild and far away.

Throughout the 70's game laws were much less stringent than now, and there were no restrictions on spring shooting or the sale of game. So the butcher-shops afforded fine places for the study of game-birds both spring and fall. Great bunches of ducks of all kinds, geese of several species, grouse, and, most interesting of all, considerable numbers of cranes, both sandhill and whooping, were exposed for sale, hanging outside and in. It was my custom to explore these places on my way to and from school and occasionally to purchase a specimen for closer study.

Such, in brief, were some of the conditions in and about Minneapolis in those days when the bird-lover was first beginning to ramble. Out in the state, northwest, things were just beginning to emerge from the early settlers stage, with railroads and villages forcing the frontier onward and conditions developing that were already working havoc with the original wild-life inhabitants. The fate of the wild pigeon, of the whooping crane, of the eskimo curlew, and of the golden plover, was already being determined. The buffalo had gone from Minnesota some time before. The elk and the caribou were retreating and with them were going the trumpeter swan, the long-billed curlew, the nesting pelicans, the avocet, and others that could not withstand the advent of man. With the exception of Thomas Say, the entomologist who was with the Long Expedition in 1823 up the Minnesota River to its source and thence north to the Canadian Boundary, no real naturalist visited this region that is now Minnesota before settlement began, and so we are

without an accurate account of real primitive conditions. It is only from the random jottings of early explorers, voyageurs, and trappers that the picture can be imperfectly constructed.

There is no period in the life of a student of nature which is more filled with true delight and real thrills than when his eyes and understanding are first opened to the things about him. If it comes early, so much the keener the enjoyment and the more lasting the impressions made. Everything, even the most commonplace, is new and wonderful, and it is hard to believe that the things were there before, unseen, and that they are not, in truth, new discoveries.

Well can the writer recall the sensation produced by the first bald eagle seen circling high over the city on a late March day in 1874 and described in the journal, begun at that time, as a big new hawk with pure white head and tail; by the first northern shrike or butcher bird collected on April 2nd of the same year; by the vast, whirling flocks of snow buntings seen the following day beyond the Bluffs; and, most thrilling of all, by the sudden and mysterious appearance in the city of a great influx of a little chirping bird that filled all the trees and shrubbery, and which proved to be the yellow-rumped or golden-crowned warbler—myrtle warbler, as we call it today. It was a banner-day for a beginner, and, as memory goes back to that 15th of April, 1874, it really seems as though never since have myrtle warblers come in such vast numbers. But the great day was May 9th of that year. It was a windy but warm day with the early leaves just appearing on the willows and poplars, as the spring had been cold and late, and we went on a collecting-trip over to Lake Johanna. The journal says "We had a very pleasant day and saw a little of everything" which

included wild pigeons, upland plover, chewinks, yellow warblers, and several early nests; but the event was the taking of two handsome strange birds late in the afternoon. These were duly submitted for identification to Dr. Hatch and Mr. Tiffany, who were plainly "stumped" but who, after much searching, pronounced them to be the then little-known Harris's finch. To this day I never see a Harris's sparrow without harking back in memory to that wonderful trip to Lake Johanna. Such are the joys of the tyro!

Nests of the scarlet tanager and orchard oriole were memorable events of that first year, and during a camping-trip to upper Lake Minnetonka the nest of a bald eagle containing young birds was discovered in a large white oak tree about where Spring Park is located today.

The swallow-tailed kite was fairly common at that time and nested in the forest about Lake Minnetonka. During migration little parties of a half-dozen or so might be seen sweeping along in graceful flight, and never ceased to be a joy. The entire disappearance of this beautiful bird, from our state, is difficult to explain.

The following winter of 1874-75 was a very severe one with heavy snows toward spring, four or five feet deep, blocking all the roads even for the sleighs then in use. Temperatures of 18 and 20 degrees below zero occurred in the third week in March. Pine grosbeaks appeared in February and March in considerable numbers—flocks of 50 or 60—feeding largely on sumach berries out about Lake Calhoun. They were new and strange to us beginners. Snow buntings were abundant in late March—flocks of many hundreds, their wings making a noise like a flock of pigeons as they rose and whirled about—at least so says the journal. They frequented the prairie east of Lake of the Isles

and Calhoun on both sides of Hennepin.

During these early winters a flock of ducks always remained in the boiling pool below St. Anthony Falls and occasioned much speculation and some attempts at shooting them. They proved to be the American golden-eye and not Barrow's as had been conjectured.

On May 14, 1875, a mated pair of snow buntings in full nuptial plumage was taken near the city. The male bird was blind in one eye, at least. It has always been a matter of wonder whether or not they would have nested here if they had been spared. As it is, these specimens are among the choice things in our collection.

The springs of 1875 and 1876 brought many new acquaintances, with records of 61 and 109 new arrivals respectively. It was a period of active collecting, and, despite the demands of high school, many specimens were secured and prepared which may be found in the trays of our study collection. Sometimes we build better than we know.

On the 23rd of October, 1875, while driving through the thick woods near Lake Harriet we were startled by a beautiful red bird that flew up by the roadside. It proved to be a cardinal and at that time was considered probably an escaped cage-bird. Now we know differently and look upon it as a forerunner of the northward movement in the range of this species that has been taking place in the last fifty years. The skin of this first bird is still in good condition in our collection.

The winter of 1875-76 was the great Bohemian waxwing year. They came in great numbers and remained until late in April. Large flocks, like flocks of blackbirds, could be seen daily moving about through the city. They fed on berries of all kinds, and toward spring, when food ran low, sought out the back yards of grocery stores where decayed apples had been thrown out.

These they ate greedily. The ground where the Art Institute now stands was thickly covered with wolfberry bushes. Here they congregated and spent much of their time devouring the withered and dried berries. Never since has there been such an invasion of this beautiful bird.

In those early years there were always many evening grosbeaks in and about Minneapolis, as is still the case in some other cities in the state. Our city streets were then full of box-elders with abundant fruit, which was what attracted them. Towards spring they assembled in large numbers on the upper end of Nicollet Island, where they fed on the ground on the fallen keys of the many sugar maple trees. They could always be found there in the mornings, but afternoons they were absent and apparently went visiting around. They were little known to ornithologists at that time and were regarded as a mysterious and specially interesting bird. Their nesting-habits are still but imperfectly known, and it is only recently that we have learned positively that they breed in northern Minnesota. We used to believe that they went far north in the summer.

Not a few specimens of this bird in our collection were taken on Nicollet Island, for, in the days of which we write, little or no attention was paid to a man who might choose to go hunting in the middle of the city.

The winter of 1877-78 was the phenomenally mild winter. There was little snow so there was no sleighing all winter, a most unusual thing in those times. Spring opened early and the ice went out of the Mississippi River above the Falls on March 5th. The lakes began opening on the 7th, and wild geese and a bluebird were recorded on that date; on the 8th, robins, mallard ducks and wild pigeons; maples were in full bloom on the 9th; fox and swamp sparrows came on the 12th; pasque flowers were in bloom on the 17th; on the 18th, a horned lark's nest contained young birds; and by April 1st most of the early spring flowers were in full bloom. Thereafter April was more like May, except that it is interesting to note that the warblers, vireos, and other far-migrating birds did not arrive until about the usual time in May, uninfluenced by the early spring. Minnesota Museum of Natural History, Minneapolis.

# Notes on the Roosting of the Starling

by Charles Reif

The Wyoming Valley Ornithological Club has recently been organized under the guiding spirit of J. Charles Tracy and has already added some information to the all-too-scant knowledge of birdlife in the vicinity of Wilkes-Barre, Pennsylvania. The principal work thus far has been centered around the observations of the starlings in Wyoming Valley.

The Starling, despite the unfavorable reports which the writer had previously heard, is a remarkable bird. In flight it is very skillful. Individuals have been seen to hover in one spot for ten seconds, then move upward, backward, sideward, or forward with nearly equal ease. During the evening flocking on windy days, starlings may be seen flying rapidly downwind, taking but one stroke every hundred yards. They approach a tree with a speed estimated at 40 miles an hour and by fanning wings and tail slow themselves sufficiently in a space of 50 feet so that they alight gracefully on a branch. Individuals can land on perches, horizontal surfaces, or vertical surfaces such as tree trunks and stone walls—all seemingly with equal ease.

One is often startled during the winter months to hear the call notes of a bird species which should be far to the south, only on investigation to find starlings, which are adept at mimicking other birds' calls, to be the author of the notes. Members of the Wyoming Valley Club have reported hearing the starlings utter calls of more than a

dozen different birds. The writer once followed for a full minute the swooping of what he thought was a catbird before he was certain that the bird was really a starling.

For years after their arrival in Wilkes-Barre, the starlings congregated during winter nights on buildings facing the town square. Why they moved to the First Methodist Church after trying the other larger churches near the square is not known, but all the winter of 1943-44 the starling population of the surrounding area has been roosting in the top room of the Methodist Church tower around which our observations have been centered.

The first census of starlings was made on January 12, with the aid of 14 students from the zoology class of Bucknell University Junior College. Relaying teams of two observers each, stationed advantageously near the tower, recorded the times of departure of the starlings. The first observers took their stations at 7:00 a. m., daylight saving time. Daylight came at 8:15 a. m. revealing a generally overcast sky. The starlings had been twittering loudly at 7:00 a. m., but none left the tower until 8:30 a. m.

As each bird or group of birds left the tower, it flew away from the tower once it had set a course. Each group apparently knew its own destination and made directly for that place. Because of this observation, which has often been checked, and the fact that the same number of birds may be seen

day after day in the winter at the same place at a given time, we believe that each starling has its own feeding area to which it goes each day.

The majority of the population left the tower between 9:00 and 11:00 a. m. on January 12, but stragglers departed desultorily until noon. From noon until 5:00 p. m. not a bird was seen. The writer kept watch from 3:00 until 7:00 p. m., and witnessed for the first time the spectacular roosting of the birds.

About five in the afternoon, an hour before sunset under a cloudless sky, a few birds gathered in an elm tree 100 yards from the tower. By 5:30 p. m. great numbers of birds had gathered in certain other huge elms along the Susquehanna River a quarter of a mile northwest of the tower. Soon the birds moved into the soft maple trees beside the church. Between 5:45 and 5:56 p. m., the entire population entered the tower room. The writer estimated that 750 birds had gone within, but when the census of the morning was tabulated it was found that 1028 birds had left the tower.

A week later, January 20, J. C. Tracy and the writer visited the tower room just before roosting time. We found that some of the screens which had been installed several years ago to exclude the birds had been loosened. The writer closed all of the upper openings except the rear central one. The single opening makes possible a more accurate census of departing starlings.

The floor of the tower room was several inches deep with droppings. The sexton stated that he had removed two truckloads, about four cubic yards, of guano from the tower in August, 1943. Recently buried in the droppings were the bodies of five starlings and two pigeons.

Tracy and I took positions in opposite corners to observe the entry of the

starlings. The birds were assembling in the maple trees near the tower, and those which tried to find the entrances which had been blocked were very noisy. The birds were more than usually excited, but finally a single bird alighted on the sill of the one unobstructed opening. This performance had been watched from the outside on previous evenings. The question arises, does the same bird enter first every evening?

The first bird to land on the sill looked around, apparently saw that visitors were present, and retreated. A few minutes later, while hundreds of birds circled the tower and a few clung to the screens of the closed apertures, a single bird landed on the sill and was immediately joined by ten more birds. The leader and two others flew into the tower room, but the rest withdrew hastily. When the three entrants realized that observers were in the tower, they made frantic efforts to escape. Two found their way outside in a minute or two, but the third remained and finally calmed enough to sit on a crossbeam and watch the observers.

Since the birds obviously were delaying their entrance, we descended to the room below the tower room and watched the single unobstructed opening which is visible through the trap doorway located in the center of the tower room floor. Five minutes later the starlings began to venture within. Soon they were entering so rapidly that counting them was impossible.

A second census was made on February 5th. The writer stationed himself in a nearby building from which the single unobstructed rear opening of the tower room is clearly visible. The temperature was 23 degrees above zero Fahrenheit. The sky was overcast. The starlings began to depart at 8:15 a. m. Most of them left by way of the rear aperture, but a few found other exits

by squirming between the screens and the stones. The exodus proceeded uniformly until 10:30 a. m. at which time the writer entered the tower room. Eight hundred birds had already departed; but approximately 150 were still in the roost, thus the first and second counts agreed very well.

The procedure of roosting during the winter follows a definite routine and appears to be controlled by the amount of light. Although the time of sunset was progressively later during the three months in which these observations were made, the time of roosting remained just a few minutes before sunset. The routine was witnessed many times. An hour before sunset, bands of five to 50 starlings converge from their feeding areas on the great elms in Nesbitt Park across the Susquehanna River opposite the church. Several hundred birds settle in one tree, and the whole flock of a thousand birds may occupy several adjacent trees. The birds move about continually and twitter loudly. About ten minutes before roosting time, small bands fly from Nesbitt Park to the elms along the church side of the river and shortly thereafter to the maple trees near the tower. A dozen or so sit on the weather vane atop the tower. The sentinel or scout bird (one of the group on the weathervane) enters the tower, and within 15 minutes the whole flock has moved inside. As the time of roosting became later the birds took longer to enter the tower room once the entrance began.

The only time the above described routine has been observed to be different was on an afternoon when snow was falling. The birds began to arrive at the tower before 3:00 p. m. They came from all directions, apparently directly from their feeding areas, and entered the tower room as soon as they arrived.

On March 14, the writer entered the tower room about a half an hour before roosting time. Seven newly deceased starlings and five pigeons lay on the dropping-covered floor. The breasts of four pigeons had been torn. The starlings were untouched and appeared to have died in perching positions. Three fresh pigeon eggs, recently fallen from the ledges where the walls support the steeple roof, lay broken on the floor. They may have been knocked from the nests by roosting starlings.

The object of the visit to the town room was to see where the birds actually roosted in the tower. The writer concealed himself beneath a poncho, using the head slit for a peek hole. The birds began to come in through the rear aperture at 20 minutes before eight, exactly on schedule. The starlings made no effort to descend to the floor of the tower room but flew, immediately upon entering, to the ledge and cross-beams. While droppings pattered on his poncho, the writer remained concealed until darkness had come to the room, then made an exit without disturbing the starlings. During this visit it was noted that the birds continued to twitter after dark. On various evenings, from the first hours of darkness until two in the morning, the writer has heard the roosting birds maintaining a continual chirping.

Members of the Wyoming Valley Club have observed bands of 'homing' starlings moving toward other roosts in the valley. The range of the birds from the First Methodist Church roost has not been definitely established but has been roughly estimated at two miles. Apparently each bird spends its days in a single area or in a series of definite localities. The principal factor controlling the time that each bird leaves the roost in the morning may be hunger. Members of the club hope to use banding techniques to determine the

answer to this and other questions brought up by this study.

Word has been received from Philadelphia that a great flock of starlings was frightened from buildings, which the birds were defacing, by placing a mounted owl on a window sill, after other attempts had failed. Tracy intends to try a mounted owl in a Wilkes-Barrean roost. The starlings do not fear the sparrow hawk which frequents the Methodist tower, so as many

different raptorial birds as possible will be used.

These observations are only preliminary work on what the Wyoming Valley Ornithological Club hopes will be a fairly complete study of the habits of the starlings. Many questions pertaining to migrations, nestings, flockings, and feeding remain to be answered. Bucknell University Junior College, Wilkes-Barre, Pa.



# Breeding Bird Census in Idaho

by William Longley

Massive rocks as large as a house, cliffs dropping 2,000 feet into a lake 2,000 feet deep, great mountains blanketed dull green all the year with thickly-grown trees or fire-swept, eroded hills bald for many decades awaiting nature's painfully slow reforestation. These were some of the scenes visible from the front porch of our Idaho cottage if we took a moment from everyday tasks to look up and realize our fortune. This was in Northern Idaho where I had the opportunity to learn some of the western birds I had known in Minnesota on rare occasions.

The grebes, for instance, western, horned, eared, and Holboell's, scarce or lacking within my small sphere in Minnesota, shared the waters of lake Pend Orielle, near Bayview, with the familiar pied-bill. Here on the great deep lake a peaceful flotilla of ring-billed gulls might suddenly become a rising turmoil of white wings when a mile-distant eagle or group of eagles unhurriedly circled into view. The eagles soared through the loose flock of white birds which effortlessly flew just above the intruders whose only chance of successful attack was surprise. Or, the flotilla might be composed of coots and scaup ducks thrashing together into a compact mass at the first warning of the white-headed eagles' appearance. Such massings prevented the eagle's singling out any one bird, and he never pressed the matter. Now and then a shrieking skyful of violet-green or tree swallows hustled a passing sparrow hawk through their airy domain, or a deathly stillness might announce the arrival of a hunting gos-

hawk or Cooper's hawk. At other times the presence of one of these accipiters was ignored, and little birds continued their song; then one knew the hawk was young and unskilled. Some of the Cooper's hawks in late summer stood stupidly in the dusty road and might occasionally catch a grasshopper there.

By night a great horned owl serenaded us from a perch just outside our door, while a distant tinkling crescendo of a screech owl came at intervals through the hushing night noises. A robin-sized pygmy owl perched in a ponderous pine by day was a silent mouse-trap for us by night. He flew like a shrike, swiftly close to the ground rising sharply to a perch where he slept during the day or watched for mice at night.

These observations were more or less casual. They increased the ever-present desire to make a detailed study of some phase of birdlife while the opportunity availed itself, and a census of a typical area of Idaho wilderness became the object and the result of 13 months' stay at the edge of the Kaniksu National Forest. Along the Cape Horn Trail through the tall red firs and western hemlocks I paced off a square 250 yds., approximately 12 9/10 acres, and divided the tract into sections of 50 square yards. All the lines were marked by blazing lightly the outer bark of the trees, and the corners of all the sections were marked with squares of cloth on which the location was noted. Thus following the blaze marks a few yards to the corner marking quickly told me my position on the tract. In time I became so fami-

liar with the territory that I knew my position on the map without consulting the corner marks. The small size of the sections permitted easy mapping, and the location of each bird on each day could be noted with ease on the map. A new map was made for each day spent in the area and a master map for final recordings of the birds' wanderings. Surveying of the area was completed in December, 1943, and the mapping in January and February; censusing was begun in March.

Early March in the fir woods brought little change from the preceding winter months. Small groups of golden-crowned kinglets pursued their apparently charted courses through the denser tree growths, and occasionally they fell in with the long-tailed chickadees when the paths ran parallel for a time. A mountain chickadee or two joined the throng at times. The chickadees were beginning to pick up the loose ends of their scattered song; the kinglets increased their chattering song to a greater intensity; a winter wren continued his persistent singing from the snowberry tangles at the spring; a pileated woodpecker called wildly in the farthest corner of the census area. As March wore on, the kinglets and chickadees laid plans for the nearing nesting season. Wandering individuals became less and less frequent; regular territories were established; and two pairs of long-tailed chickadees, three pairs of kinglets, and a pair of mountain chickadees settled down to pre-nesting activity on the area. A ruffed grouse male appeared more frequently as March lengthened. The first day of spring brought a brown creeper, a singing male Oregon junco, a red-shafted flicker, and two robins. A male varied thrush, which came in February, was joined by a mate at this time. Passing crows, ravens, and Stellar's jays added to the growing parade.

Then a fox sparrow came with his song, and a mated pair of spotted towhees was seen. Later they returned to nest, but their nest and four eggs were destroyed. On April 9, the long-tailed chickadees were busy digging homes, one pair in a low stump, the other ten feet high. Both diggings may just have been practice, for as soon as completed they were deserted. One chickadee had lost her tail, and thus marked was a distinctive personality until her family grew up and left the nest when her tail was again full length. I like to think that I may have helped this little No-tail in making full use of her second excavation.

A week after abandoning her first attempt she and her mate were found a hundred yards away working at another low stump. The male worked hard and fast, pounding on the inside one second, carrying a load of rotten wood away the next, while No-tail mostly sat and watched. Her interest was lagging. On her infrequent sallies to the nest she only clung to the entrance and pecked at it. Then I noticed her robust form could not pass through the small entrance; the bark was tough and resisted her pecking. When the hard-working male led her away after food, I carved the entrance hole a third larger. They returned quickly, and he set to work again carrying but four loads before she ventured to the hole. What she saw there must have pleased her. She hesitated no more, but plunged in to emerge with a beakful in a second. Now she dug and carried with renewed energy more than her share. A month later her six-egg clutch was laid, and 30 days later six young left the nest.

During those weeks I felt a close friendship with little No-tail, and with all the birds who claimed a part of the census area for their own. Two other friendships, however, were a bit more

difficult to make. A pair of pine siskins which appeared but three times before a clamoring nestful of youngsters on June 25, made clear that they really did belong to the association and a pair of varied thrushes whose persistent presence from February to August could only mean that they, too, must be counted whether or not the nest was found. No action of the thrushes indicated the presence of a nest, but varied thrushes are no more prone to lead one to their nest than are the olive-backed thrushes, four pairs of which used each a part of my census area. Two of their nests I found in June; each was deserted later presumably because I handled the eggs. Then one pair rebuilt but deserted again when I located the nest. Another nest was successful maybe because that female was more courageous. She left the tree when I approached and must have known her secret was discovered, while the other nests were unguarded. Varied thrushes probably withdraw just as quietly from the vicinity of the nest at the first approach of an intruder. Varied thrushes could be approached only when the male was singing. Pleasing it was to listen in the half-light of dawn or of overcast skies to the weird, vibrant, trebling voice of the high-perched male. The song was of wilderness, of deep woods, of tall trees, and of deep humus underfoot.

No bird call, not even the drumming of the ruffed grouse, the tapping of the red-naped sapsucker, the squeaking of the rufous hummingbird, the bleat of the calliope hummer's courtship dive or the unmelodious insistence of Hammond's, Wright's, or olive-sided flycatcher, all characteristic birds of the census area, sounded as singularly primitive and bewitching as the unconnected trilling of the varied thrush.

Of the five species of warblers inhabiting the study area the yellow warbler and redstart were represented by

five pairs each. Of MacGillivray's warbler, much like the mourning warbler, there were four pairs, and of Audubon's and Calaveras warblers there were but one pair. Audubon's is the western counterpart of the myrtle warbler, and Calaveras is almost identical with the Nashville warbler. Though only one pair of Calaveras remained during the nesting season, there were three males singing in the area in May. One sang a few days and was gone. The second stayed on nearly a month. The third sang loud and long, late into summer until I wondered if his search for a mate was in vain. About two acres of brushy woodland came under his surveillance. His neighbors on three sides, three pairs of MacGillivray's warblers, probably competed as much with him for food and cover rights as would birds of his own kind. It is possible that the MacGillivray's displaced the two other Calaveras warblers which had prior claim by two weeks to the territories later taken over by the more aggressive MacGillivray's. By late June the latter had young out of the nest in two or three cases. Four pairs of the yellow warblers and four pairs of the redstarts, and the pair of Audubon's warblers were also caring for their unsheltered young at this time. All true to kind they began life each in his suitable environment. In low bushes a tiny MacGillivray's impatiently "tseeped" at every movement that might signal his parent's return, and he dropped to the ground to scramble rapidly out of sight when I attempted to capture him; young yellow warblers followed their parents through small trees in the more open parts of the woods; redstart young cried from the shelter of deep shade well up in the lower branches of deciduous trees; the higher limbs of hemlock and fir served as home to little Audubon's. Each young warbler seemed innately to know its own niche.

There were others. I have not told of them all, but on the 12 9/10 acres nested 56 pairs of twenty-six species which makes the high density of 868 adult birds per 100 acres. There were six pairs of red-eyed vireos, and two of warbling vireos, one or more of western tanagers, and two each of Oregon junco and chipping sparrow to complete the picture. Then there were others which came only once in a while—soaring turkey vulture and red-tailed hawk, grunting raven, violet-green swallow, Cassin's pur-

ple finch, black-headed grosbeak, and black-throated gray warbler. And for future reference there are the data on size of territories used by breeding birds, this was excess profit but very welcome.

It all adds up to this: Next year I'm going to take another breeding bird census, for personal enjoyment first, but not the least will be the knowledge gained. This time the census will necessarily be restricted to an area near the Twin Cities. St. Paul, Minnesota.



## NOTES OF INTEREST

**AMERICAN AVOCET IN DULUTH**—The occurrence of the American avocet in Duluth is an item of interest in the local bird records. On the morning of May 21, 1944, the writer observed a single individual feeding in the surf of Lake Superior, Minnesota Point, about four miles from the Duluth entrance canal. So that they might witness this unexpected discovery, several members of the Duluth Bird Club were summoned by telephone. Thus the feeding bird was sighted during the morning hours by Dr. Robert Gregg, Dr. Elizabeth Graybeal, and Misses Alma Chesley, Margaret Adam and Mary I. Elwell.

In Minnesota the American avocet has been on the list of species extinct to the state for a long time. According to Dr. Thomas S. Roberts in *THE BIRDS OF MINNESOTA*, there is on record but a single previous observation since 1874, the established time for the disappearance of the species. In 1934 a stray bird was sighted in Murray County, southwestern Minnesota.

The American avocet belongs to the western prairies where it inhabits the white-crusts shores of alkaline lakes. The bird is known to the writer from the shores of alkaline lakes southwest of Minot, North Dakota, where it commonly nested. It is believed to have nested in Minnesota, in the western part of the state, but there is no breeding record. The species has a wide geographical distribution, from Manitoba to Central America and southeastern United States. Olga Lakela, Duluth State Teachers College, Duluth, Minnesota

**A MINNEAPOLIS AUDUBON SOCIETY FIELD DAY**—On Friday, May 19, the Minneapolis Audubon Society held its annual picnic in connection with its regular weekly Glenwood Park field trip. The day, preceded by heavy rain and violent wind, was dark and threatening, with a temperature of 46° at our 9 a. m. start and 57° at the 3:45 p. m. finish. Nineteen brave participants ventured forth; these ranged from beginners thrilling at the sight of their first fluttery redstart to charter members enhancing their thirtieth Audubon spring program with rich memories. Eight of us were in the field five or six hours; the rest, for shorter periods.

Much of the time we birded in small groups - some in the wooded glen south of the lake, some on the more open hilltops, and others through the evergreens west of the lake to the golf course swamp just beyond. The latter group's 11 water bird species included the green heron, the American bittern, spotted, solitary, and least sandpipers, and - most exciting of all - the spectacular Caspian tern. All groups enjoyed cardinals and other permanent residents, numerous flycatchers, thrushes, and vireos, hosts of warblers of many kinds, and a variety of other transient and summer birds. Altogether we listed 100 species, though we had set no goal. Considering the poor visibility and a less songful migration peak than usual, we felt quite proud of our score.

Of the twenty-two warbler species found, the golden-winged, parula, Cape May, Blackburnian, bay-breasted, and Canada made up the fascinating minority,

together with stragglers from the great myrtle and palm flocks gone before; though ordinarily included in the minority, the mourning was more in evidence than usual and the chestnut-sided was almost common. In addition to all of our breeding flycatchers, both the olive-sided and yellow-bellied were present, the latter being surprisingly plentiful. Wherever we went, this pretty little flycatcher, perhaps murmuring his plaintive perwee, and a gay chestnut-sided warbler, displaying his yellow cap, stood out among the customary throngs to give us special delight.

Olive-backed and gray-cheeked thrushes were abundant, but our two summering varieties were scarce. An occasional blue-headed and Philadelphia vireo lingered with our three nesting kinds. A single shy little Lincoln's represented the transient sparrows amid five local branches of his family. A red-breasted nuthatch and a ruby-crowned kinglet obligingly loitered behind for our count. And as always, certain individuals of resident or neighboring species attracted particular attention - a towhee interrupting endless repetitions of his name now and then to sing a beautiful, rich trill; a nighthawk sleeping all day on a branch over the path, oblivious alike to humans chattering below, goldfinches chorusing around, and a Baltimore oriole whistling above; and so on, and on.

The Wild Plant Reserve lured all of us - violets, trilliums, mertensia, masses of wildflowers everywhere. Ovenbirds threaded their way daintily through the ferns while redstarts, magnolias, and vivid warblers of many sorts splashed color through the fresh greenery above. And not a mosquito arrived to mar our pleasure! We had a thoroughly successful day. Lulu May Aler, Minneapolis, Minnesota.

**OBSERVATIONS OF BIRD LIFE AT EAST BEAVER BAY, LAKE COUNTY AND VICINITY**—Some sixty species of birds came to the attention of the writers on the north shore of Lake Superior during the two weeks, August 8-21, 1944. With the exception of heavy rains on August 19, with strong northeast winds, the weather during the period was mostly clear and unusually beautiful. Warm southwest winds brought in an abundance of biting flies. August 18 marked the beginning of a migration of Monarch butterflies; they clustered on the Joe-pye Weed (*Eupatorium purpureum*) in numbers about the cabins. A black bear was sighted on the interior road from Beaver Bay to Stewart River on August 21. The following is an annotated list of the birds observed:

Loon—One was noted in Lake Superior on August 11.

Horned Grebe—A single individual was feeding and diving near the shore rocks on August 11.

Pied-billed Grebe—On August 21, one came close to the shallow water on the shore to feed and dive.

Double-crested Cormorant—On August 14, two were riding the high waves in front of the cabins at East Beaver Bay.

Great Blue Heron—Several individuals were sighted from time to time in flight across the bay. On August 14, 2 lighted on the beach directly in front of the cabins.

American Golden-eye—On August 11, one female was observed near the shore.

American Merganser—Between August 9-14, four families were observed in Lake Superior at East Beaver Bay and vicinity.

Red-breasted Merganser—On August 14, at sunrise 8 young with a female

swam close to the shore to swim in shallow water. The young appeared half grown their downy plumage was still obvious. With swift strokes of their bills right to left, the young seemed to feed on something at the surface film of the lake; then they sportively "ran" on the surface to dive and emerge in quick succession. The writers have studied the American merganser on the same shore. The white throat of the latter in juvenal and adult plumages is an unmistakable field mark.

Red-tailed Hawk—Observed soaring near Stewart River on August 21.

Broad-winged Hawk—Several sighted along the Finland-Cramer Road on August 20.

Marsh Hawk—One flew over the tree tops toward Lake Superior on August 10.

Osprey—On August 10, one was seen flying across the gorge of the Baptism River; on the 17th, two circled over the highway at East Beaver Bay.

Pigeon Hawk—The writers are reasonably certain that this species was correctly identified in tree tops of the shore woods at East Beaver Bay on the morning of August 14. During the preceding evening several were noted in flight over the same trees. The general color of the upper parts and the white face best fit the description of this species.

Sparrow Hawk—One was sighted near the highway on August 11; many were observed along the interior road from Beaver Bay to Stewart River on August 21.

Semipalmated Plover—With Baird's sandpipers one individual was observed feeding in the surf in front of the cabins on August 15 and again on August 19.

Killdeer—Observed on the highway on August 10.

Spotted Sandpiper—Almost daily a few individuals were seen feeding on the shore rocks.

Pectoral Sandpiper—On August 15, one bird was noted among Baird's sandpipers.

Baird's Sandpiper—Frequently sighted on the beach in groups of 2 to 6, the first noted on August 14. Four were observed on the Ely-Finland Road on August 18. For several minutes the birds took short intermittent flights in sparrow fashion in front of the slowly moving car, until frightened away by the horn of a passing motorist. On August 20, three were found in the middle of the road from Beaver Bay to Stewart River.

Herring Gull—Flocks of hundreds inhabit the rocky islands off the shore, patronizing regularly the landing docks of local fishermen.

Nighthawk—Every evening observed from the highway; many seemed to be flying south.

Ruby-throated Humming Bird—One to two birds regularly visited colonies of jewel-weed (*Impatiens biflora*) around the cabins.

Downy Woodpecker—A daily visitor in the trees and shrubs around the cabins.

Kingbird—Seen on the highway on August 18.

Phoebe—Frequently seen around the cabins, the first on August 8.

Least Flycatcher—First noted on August 14; rather frequently seen and heard.

Wood Pewee—Heard in the pine woods above the highway, on August 18.

Tree Swallow—Relatively frequent; first seen on August 8.

Barn Swallow—First noted at East Beaver Bay on August 9; several flying about barns at Lax Lake, August 19.

Crow—A few patronized the nearby fish-landing docks; occasional on the highway.

Black-capped Chickadee—Observed in Baptism River gorge on August 10.

House Wren—Seen daily along the creek near the cabin. Four young out of nest on August 20.

Robin—A nest was discovered on the grounds of the Beaver Bay P. O.; parents carried food; too high for counting the young.

Bluebird—Occasionally seen on wires near the highway.

Cedar Waxwing—The most frequently seen bird along the north shore. At East Beaver Bay the birds constantly flitted back and forth between the jutting rocks off the shore and the vegetation of the beach.

Blue-headed Vireo—First seen about the cabins on Aug. 8; on Aug. 13, the species was noted at Manitou Falls.

Red-eyed Vireo—Frequently observed in the shrubs around the cabins; on August 8, one was seen feeding on caterpillars. The bird held the caterpillar near the middle of its inch-long body, and repeatedly thrashed it right to left against the branch; finally the limp "worm" was held at one end and swallowed. The species was also noted on the Palisade on August 9.

Warblers—The following warblers were noted in the shrubs around the cabins, chiefly early in the mornings, during breakfast time: Black and White, Tennessee, Nashville, Eastern Yellow, Magnolia, Black-throated Blue, Blackburnian, Chestnut-sided, Northern Pine, Oven Bird, Grinnell's Water Thrush, Connecticut, Canada, and American Redstart.

Bronzed Grackle—A small flock noted along the interior road from Beaver Bay to Stewart River on August 21.

Purple Finch—Several seen along Baptism River between Finland and Cramer.

Goldfinch—Relatively frequent about flower beds, and in shore woods, first seen on August 8.

Vesper Sparrow—Fairly common on the lake shore roads, first noted on August 8.

Slate-colored Junco—Observed on the Palisade on August 9.

Chipping Sparrow—Seen on the highway, August 17.

White-throated Sparrow—Observed and heard in the shore woods, August 11 and almost daily.

Song Sparrow—Seen daily around the cabins. Olga Lakela and Mary I. Elwell, Duluth State Teachers College, Duluth, Minnesota.

OBSERVATIONS ON AMERICAN EGRETS—At 7:40 a. m. on July 10, 1944, Mr. Ed. Wellin and I observed two American egrets in a small slough about 10 miles north of Willmar, Minnesota. We watched them through field glasses; their large size, white plumage and yellow bills identified them as American egrets. Bernard A. Nelson, St. Paul, Minn.

Editor—Mr. Horish, a railroad engineer, reported seeing a number of American egrets in a marsh along the railroad tracks between Mudbaden and Marion Junction in Scott County on August 22, 1944. Warden Carlos Avery, of the Minne-

sota Division of Game and Fish, saw nine egrets near Glesne Lake in Kandiyohi County on September 12, 1944.

**A WINTERING BROWN THRASHER**—A brown thrasher appeared at our feeding boards for a meal the day following the snow storm on November 7, 1943. It seemed to make up its mind that this would be a good place to hang out for the duration of winter where, by the way, it sensed a good guss; and it had the frigid pleasure of feeding on the north side of the house when the wind was in the south and on the south side of the house when the wind was in the north. So poor Mr. Brown Thrasher lived quite comfortably resting in our garage at night, since we made it a point to leave the garage door open entirely for his welfare. At the feeding boards he would stand on one foot and then on the other as he consumed the foods which consisted of melted suet containing seeds, cracked corn, and bread pieces which he devoured gleefully. I may be mistaken, but one day after he had partaken of a generous meal, while I was watching him through the dining room window, he signified his gratitude for the meal by giving me a very grateful wink of his right eye as he flipped to the garage for a rest. He has been absent now since the middle of April and has sought residence in some other district no doubt, although we were hopeful that he might have found a mate and prepared to nest in our midst so that we could have enjoyed his song. **Dr. Robert C. Farrish, Sherburn, Minnesota.**

**Editor**—There are now quite a number of records of wintering brown thrashers, but additional records are still of interest, especially when an entire winter is covered and details are given.

**AN EARLY CARDINAL'S NEST PLUNDERED BY A BLUE JAY**—A completed cardinal's nest was discovered in a mock orange bush next door on April 8, 1944. The bush was entirely in the open, on a steep hillside below the back steps, so that to see in the nest one had to climb on the railing and look down into the nest at an angle. There was not a leaf on the bush, so that the nest was entirely exposed, and in full view of our bedroom windows. The nest was a typical cardinal's nest except that the birds had woven into the structure a lot of candy bar wrappers, even one 2-inch strip of tinfoil, making the nest at the bottom and sides almost airtight. On the 10th the first egg was laid. On the 13th the temperature was in the 60's, but bad weather followed. It started to rain in the afternoon, and the temperature began to drop. On the 14th the rain turned to sleet, then to snow, with the temperature down to freezing. On the 15th the thermometer registered 24 degrees.

From the onset of the bad weather the cardinals stuck tight to the nest, the male taking his turn while the female took her constitutionals. On the 25th a mirror was used. There was one young bird in the nest, just hatched, and 1 egg. The birds continued to stay close to the nest most of the time. On the 29th I could see the male bird feeding the young bird while the female was off the nest. On the 30th it was raining. About 10 a. m. a neighbor, who is a good observer, called me on the phone and told me that a pair of cardinals and a pair of robins were flogging a bluejay, and that one time they actually had him on the ground, and seemed to have him by the neck. I ran over and the young bird was gone from the nest. The female finally went back to the nest and sat on the remaining egg until the following afternoon. The nest was then abandoned, leaving the remaining egg unhatched. **Evelyn P. Wentling, Saint Paul, Minnesota.**

**HOLBOELL'S GREBE NEST ON ELBOW LAKE**—While fishing on Big Elbow Lake southeast of Mahnommen on Memorial Day, 1944, we found a nest containing four eggs of a Holboell's grebe. As we approached to within 25 feet, the bird on the nest covered the eggs with nest material and dove into the water, swam under the water through the reeds, and came up near another grebe about 25 feet away in open water. Both birds stayed around without appearing excited until we had examined the nest and taken pictures. The nest was little more than a mass of floating debris and stems of rushes loosely attached to four willow stems growing in about 2 and one-half feet of water 12 feet from the shore. As we moved away in the boat to about 15 feet from the nest, one bird returned under water and came up a few feet from the nest. Twice the bird did this, appearing to inspect the nest, but not until we withdrew about fifty feet did the grebe go onto the nest. At no time did the birds appear to be much afraid of us. They swam back and forth at a distance of about 25 feet from the nest, promptly returning to it as soon as we started away. It looked as though the main concern of the grebes was to get back to the work of incubating. **J. H. Wampole, Crookston, Minnesota.**

**COURTING DISPLAY OF A MALE CARDINAL**—On April 29, 1944 we were privileged to watch the courting display of a male cardinal. He had been hopping about in the tree by the feeding station, flying down occasionally for a sunflower seed, when a female flew into the same tree. Instantly he saw her, elevated his crest and sang loudly. Then, bending his head and neck rhythmically from side to side, crest elevated and tail spread, he sang very softly with his beak closed.

After a while, he did a little dance along the twigs until he was directly in front of the female. He sang softly all the while and kept his crest elevated. Sometimes he moved along the twigs with little side-stepping runs, sometimes he progressed in little hops. He spread his tail, then closed it and moved it from side to side until it was almost at right angles to his body. When he reached a perch in front of the female, who had been sitting quietly and watching him, he repeated the bending actions of his head and neck, varied with fluttering his wings, moving his tail back and forth and raising and lowering his crest. He sang all the while, sometimes with his beak open, but more often with it closed. The female, meanwhile, leaned towards him, crest erect and beak open. Apparently she was panting. As the display reached a climax, the male reached towards her with his beak, but she withdrew and turned her back. He tried, briefly, to attract her attention again, failed, and then began to inspect the buds of the tree very closely. **Mrs. Sadah W. Field, R. F. D. Holdridge, Wayzata, Minnesota.**

**REPORT ON THE BIRDS OF HILLTOP ACRES, WALKER, SUMMER, 1944**—Purple Martins (110 pairs). We had 8 houses totaling 127 apartments. Six were full except for the one pair of starlings. The two having the vacancies this year also had them last year. In the case of the Chinese design house of 24 apartments, 12 are on the east, 12 on the west in 3 rows of 4 apartments each. We are convinced that the martins do not want that many apartments in a row. We are considering closing up the 6 end apartments on each side and changing the entrances to the ends of the house. In the case of the round house, it is too near the trees. Another house exactly like this one, but out in the open was full. The martins left very early, were nearly all gone by August 4.

Tree Swallows (26 successful broods). 29 pair nested. 21 pair went through successfully with the first setting of eggs. Of the 8 which were destroyed, 6 re-

nested on our acreage and 5 of these had 4 young each leave the nest. Only 3 of the original 29 did not have successful broods with us. Two broods of young were killed in the nest, but no young died in the boxes. One tree swallow colony has 8 houses on a single perpendicular pole. In 1941 the tree swallows used the top house. In 1942, '43, and '44, they used the same top house and one close to the bottom. They refuse to use those in between.

**House Wrens** (10 successful broods). 13 pair nested. 10 pair were successful with a total of 49 young leaving the nests. One other hatched but died in the nest. This happened in our one small setting of but 3 eggs. The male wren was a bob tail. The other nine nestings were, 5 nests with 6 eggs, 4 with 5. Of the 2 unsuccessful nests, I destroyed one with 3 eggs by accident; a third wren broke up the second nesting with 2 eggs.

**Bluebirds** (3 successful). 3 nested and were successful. Each had 4 young, but the first brood during the early cold weather lost two of their 4 young. When I arrived May 26, I found another perfect bluebird's nest which appeared never to have been used.

**Robins** (7 successful). 7 pair nested, 4 on roosts, 3 in trees. The one in the birch used the same nest twice. Our roosts up for the third season and so popular the first two years did not prove popular this time. However, we did not have a third nesting this year which cut down our total by at least 3.

**Phoebe** (2 successful). 2 pair nested, one twice, but their first nest was not successful. At first two eggs were lost from the nest on the side of the log garage; then 2 half-grown young were found on the ground some days later. Their second nesting was successful with 4. The other phoebe nested on top of a robin roost where I could not check. Counting heads through the glasses, there appeared to be 5 or 6.

**Crested Flycatcher**. 2 pair nested but a red squirrel apparently threw out the shells of 3 eggs. The 4th egg we found buried deep in the nest when we cleaned out the box. The other nest we investigated just as it had been completed. The house was of a type difficult to check and the site was also inconvenient. The flycatchers were constantly about for some time. Then we noticed a wren going in and out this much too large house for a jenny. All that mass which only a crested flycatcher can drag in had been removed and was replaced by wren sticks.

**Cedar Waxwings** (3 successful). Many about. Saw 3 nests, 1 in a twin balsam fir, 2 in oak.

**Chipping Sparrows** (2 successful, 2 destroyed). An endless number of these birds. Found 4 nests, all built in spruce. First 2 were unsuccessful, each being destroyed after 3 eggs had been laid. The second two were built higher up in larger spruce and had 4 and 3 young respectively.

**Yellow Warblers** (2 successful). We used to have 4 or 5 nests of these, but this year there were but 2 that I found. One had 5 young; the other 2. The former in a tiny wild rose bush which we have found is a great favorite with them; the second was in a small sheepberry bush.

**Baltimore Orioles** (2 successful). Two are all we found on our acreage. Five were located just outside our property. We put up 9 nesting racks (for nest material) and from the endless orioles using them, there were many more close by. We find the orioles like to feed among oaks and having 12 such huge trees, never

lacked for splashes of orange. I am hoping we get back for Christmas so we can make a deserted nest check.

**Catbirds** (2 successful). One in large viburnum bush with 4 young. Another in balsam fir with 3. Found a third catbird's nest on June 26 with 2 eggs in a small oak. Was unable to check the nest again for 10 days because it was so successfully hidden, we couldn't spot it. When we did locate it, the nest was empty.

**Least Flycatchers** (2 successful). The place was alive with them. I noted but 2 nests, but for 10 to 15 days in July the trees were so full of them, I must have missed many. Both nests were in birch.

**Warbling Vireo** (1 successful). This dainty hanging basket was in a birch. We hear their song everywhere on our hilltop. I verified my identification from my set of Cornell bird records.

**Starlings** (2 pair). Our first experience with this bird. Never saw them in this vicinity before. Each had 3 young, the one in a martin house and the other in a flicker house. Mrs. Devin, 2 miles west of us, reported seeing 2 pairs of starlings in her yard, April 16. The pair in the flicker house had an older brood by many days which might indicate that for a time the martins fought off that pair.

**English Sparrows** (1 pair). When you asked me if we never had English sparrows I could truthfully say "No, never". However, when we cleaned out the tree swallow colony on August 12, we found a nest of three still in the pin-feather stage.

We had an endless number of finches, both gold and purple. Saw them feeding their young in our trees but not one nest did I locate. Also flickers, yellow-bellied sapsuckers, white-breasted nuthatches, and hairy woodpeckers fed all over our trees. The uncut meadow to the south and west, dotted with its swampy spots, gives us outside our acreage a number of ground and marsh nesting birds. Mrs. Paul A. Becker, Owatonna, Minnesota.

Note—Mrs. Becker is already known to the readers of THE FLICKER from previous communications. She and her husband have a summer home on the south shore of Leech Lake in Pine Lake Township, Cass County. It is in a sparsely settled region. The Beckers have 3½ acres surrounding an attractive log bungalow and out buildings. It is wooded with native trees and some artificial plantings. Mrs. Becker's writings show that they are enthusiastic and intelligent bird students and close observers of the abundant native bird life and especially of the surprisingly large number of species that they have attracted by the nesting facilities provided. The Beckers feel that their work has only just begun and certainly if they continue as they have begun they will in time have a bird haven presenting rare attractions. Thomas S. Roberts.

ONE SEASON OF BLUEBIRDS—When we found this bluebird's nest at our shack at Hilltop Acres, we had no idea of the interesting family life that was to unfold before us. The nest was on a robin's roost on the northeast corner of our shelter house, 7 feet from the ground. The nest, very scanty and poorly made, was already built the last of April, 1943, when we happened in for a visit. When we returned permanently the first of June, the nest was still without eggs and appeared deserted. However, eggs began to be deposited about June 10. All observations were made in the deepest shadow by two huge basswoods, and we came to realize that a male bluebird of several seasons seen in full sunlight is quite a dif-

ferent looking bird from a female seen in deepest shade. Four watchers never once caught sight of the male around the nest. His listening post was about 100 feet to the north, on the southeast corner of the garage and the telephone wire close by it. The female was so extremely shy that the slightest movement or sound frightened her from her nest, and she disappeared as if by magic into the uppermost branches of one of the basswoods. Incubation was much interrupted; yet five healthy babies left the nest. We never happened upon the male helping with the feeding.

Several days after the young had left the nest, the bluebird parents, from high in the basswood, presented us with a most heavenly one-evening's opera. It was like the delicate warble of tiny, tinkling bells. To us, the story back of their expression of happiness was that a well-completed duty was behind them—that all was in readiness for another to begin. I have since heard them express the rapture of their first arrival in spring. In 1943 they put on, in song, the equivalent of "The Mad Scene" when they discovered that tree swallows had usurped a box they had apparently reserved for their second brood.

But to return to the warble of tiny, tinkling bells. Shortly, thereafter, they entered upon the preparations for their second brood. The nest was not 12 feet from our front porch, and 35 feet northwest of the old nest. It was several days before we felt sure that they had decided upon this box when we saw some nest building activity on the part of the female. The male tried to afford her a certain amount of protection or encouragement, for occasionally he would fly over the nesting box. But he always returned to a nearby choke cherry thicket, where he continued to play nursemaid to their first brood. They demanded food; and with the patience of Job, he fed them. He was the most faithful father for being so in absentia while incubation and feeding in the nest were in progress. Several times when the female was building, I saw her alight on the shelter house, or the now deserted robin roost. I did not see her carry any of the dead grass which comprised the old nest; but when I investigated the robin roost, only dust and short ends remained in the center. It appeared as though the dead grass had been lifted out gently. Furthermore, it had not been torn up by any animal since none of it had fallen on the ground beneath. What happened? Did the female salvage the grass for the new nest?

About the time we were sure they must have their nest built, they seemed to vanish, and we wondered whether they had decided to leave. After what seemed a week or ten days, we again saw some activity. From then on Papa Bluebird and his five charges kept closer to the house. Those five babies were literally tied to daddy's suspenders. In due time, a peculiar thing happened. The young bluebirds flew to the box, hopped and danced all over it. Several of them persisted in peeking inside. Then the mother flew in with food proving that the eggs of the second brood had hatched. From then on, the young of the first brood made constant visits to the house and even went inside as many as four at a time. I worried for fear they might do harm to their brothers and sisters. This time we saw the father help with the feeding, and often he or the mother would come home with food, only to find one or more of the older brood also inside. Usually they hopped out very quickly after the parents' arrival. It seems that even feathered fathers and mothers meet the problem of older children under foot by telling them to "skedaddle."

I was not fortunate enough to see the young leave their nest, but when I cleaned it I found no dead baby birds. Evidently the visits from the first brood

had been full of sisterly and brotherly love. After a few days, the first and second broods, together with the parents, were found close by our "shack." I counted exactly one dozen birds of blue. The daddy was easily recognized by his deep blue color. I had for so long watched the mother in flight that I knew her by her quick streamlined movements. As for the young, the first brood acted quite grown up by now. The young of the second brood showed their more youthful markings and babyish actions. They continued to live as one big family about our hilltop. They loved to bathe in our four rustic bird baths. They appeared to possess an endless curiosity about our other bird houses. Whether for tree swallow, wren, bluebird, robin, or martin, it mattered not to them. From morning until night, they hopped, they snooped, they peeked in each and every one. Such pleasure! What a sight!

The afternoon of October 6 was exceedingly warm. About four o'clock the flock gathered at the bird bath in front of the "shack." I wondered how much longer I was to thrill to such a sight, and if bluebirds do return to the great out-of-doors of their birth. I was glad I did not realize they were drinking for the last time, in preparation for their flight south, but this proved to be the case and here my observations of this remarkable family ended. Mrs. P. A. Becker, Hilltop Acres, Walker, Minnesota.

**EARLY SPRING NOTES FROM THE NORTH SHORE AND GUNFLINT TRAIL**—A few days of the first week in May were spent along the North Shore and along the Gunflint Trail. A light drizzle fell during the first day (May 3), and the following two days were cold with light snow flurries,

Along the Gunflint Trail on May 3, ruffed grouse, junco, robin, white-throated sparrow, northern yellow throat, song sparrow and kingfisher were seen. Species seen on May 4, between Grand Marais and Schroeder were: woodcock, sharp-tailed grouse, ruffed grouse, kingfisher, bluejay, flicker, robin, great blue heron, sparrow hawk, white-throated sparrow, song sparrow, marsh hawk, crow, herring gull, vesper sparrow, and killdeer. On May 5, along the North Shore drive between Grand Marais and Little Marais, these birds were seen: pair of mallards, pair of baldpates, and a pair of blue-winged teal in roadside ditches; a few lesser scaup, red-breasted mergansers and loons on Lake Superior; eight greater yellowlegs in a roadside ditch. Hermit thrushes were seen in large numbers along the road and robins were noticeably abundant. In one roadside ditch near Schroeder, a hawk was seen standing on a half submerged log with a female blue-winged teal in its talons. As I approached, the hawk flew, carrying its prey for a short distance before dropping it. The teal was able to walk and swim and appeared to be injured in only one wing. I did not positively identify the hawk, but thought it to be either a pigeon hawk or duck hawk. Bernard A. Nelson, Division of Game and Fish, Minnesota Department of Conservation.

**THE BOBOLINK IN ST. LOUIS COUNTY**—Each summer since 1935, the writer has observed bobolinks at various localities north of Duluth. In 1942 Dr. and Mrs. Robert Gregg brought to attention the presence of bobolinks in a meadow near Chester Park School in Duluth. During subsequent seasons the birds have returned to the meadow. Not before the current summer was an attempt made to locate nests. On July 8, Miss Alvera Larson with the writer discovered a male and female bird carrying food, which led to the discovery of the nest. As itemized under

nesting records, the four young were dead from violent causes. Three young were headless with bodies intact, still warm and bleeding. There was no evidence as to the fate of the severed heads. The fourth young was wholly intact with open beak. Perhaps the distressed female was still trying to feed it. She was observed to fly into the nest several times with food in her bill, always returning to perch in a nearby tree with the food still in her bill. The young were fully feathered. The one that was not decapitated was collected and preserved for the State Teachers College bird collection. The cause of the tragedy is not known. The other pairs of bobolinks inhabited the same meadow. It was not possible to locate their nests. With clearing of the land, new nesting sites are available to birds that seemingly follow civilization. In June this summer the writer observed 3 pairs of bobolinks in a brookside meadow at Palo, about 10 miles south of Biwabik. Their nests were not located, but on August 4, the birds were still there. For over twenty years the writer has observed bird life at Palo. The bobolink is a new arrival there. Olga Lakela, Duluth Teachers College, Duluth, Minnesota.



To members of the Minnesota Ornithologists' Union:

The University of Minnesota Press has published a large number of books of interest to naturalists, and an arrangement has been made whereby these books are now available to M. O. U. members at a 10% discount, with an additional trade discount going to the Union treasury for aid in publishing *The Flicker*. Remember, then, that for everyone of these books which you buy, or can sell to others, you benefit the publication fund and make possible a better magazine.

Orders and remittances should be sent to the treasurer and books will be mailed promptly.

Birds of Minnesota, Roberts (2 Vols., Revised edition) .....	\$15.00
A Manual for Identification of Minnesota Birds, Roberts .....	2.00
Canoe Country, Jaques .....	2.00
The Geese Fly High, Jaques .....	3.00
Butterflies, Macy and Shepard .....	3.50
Northern Fishes, Eddy and Suber .....	4.00
The Indoor Gardener, Abbott .....	1.50
The Northern Garden Week by Week, Abbott .....	1.00
Common Edible Mushrooms, Christenson .....	2.50
Guide to Spring Flowers of Minnesota, Rosendahl and Butters .....	1.00
Trees and Shrubs of Minnesota, Rosendahl and Butters .....	3.00
On Your Own, Graham and O'Roke .....	2.00
Snowshoe Country, Jaques .....	3.00
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A limited number of the following list of books of special interest to ornithologists is being made available to the Union members and their friends. The discount given to the Union on these books, however, will not allow the organization to give the 10% discount to members but any of these books sold will aid the M. O. U. treasury for the financing of *The Flicker*.

Birds of America, Audubon .....	\$ 4.95
The Canvasback on a Prairie Marsh, Hochbaum .....	3.00
Birds Across the Sky, Jaques .....	2.50
What Bird is That, Chapman .....	2.00
Field Guide to the Birds, Peterson .....	2.75
Field Guide to Western Birds, Peterson .....	2.75
Guide to Bird Watching, Hickey .....	3.50
Natural History of the Birds of Eastern and Central North America Forbush-May .....	3.75
Bird Prints—a portfolio of 10 colored prints, Fuertes .....	1.50
9" by 12" including mat	
Ducks, Geese and Swans of North America, Kortright .....	4.50
Illustrated Encyclopedia of American Birds, Hausman .....	1.98
Watcher at the Nest, Nice (original price \$2.50) .....	1.00
Cowbirds, Friedman (original price \$6.00) .....	1.98
Color Key to North American Birds, Chapman (original price \$5.00) .....	3.75
Guide to Bird Songs, Saunders .....	2.50
The Woodcock, Knight .....	4.00
Game Birds of America—a portfolio of 12 colored prints, Hunt .....	5.00
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Tanager Hill, Commons .....	1.00
Logbook of Minnesota Birdlife, Roberts .....	1.00

Any of the above books may be secured by writing to Mrs. I. A. Lupient, Treasurer, Minnesota Ornithologists' Union, 212 S. E. Bedford Street, Minneapolis, 14, Minn.



*Members of the M. O. U. are urged to send to the editors by December 1, all nesting data collected during the last nesting season. These data will be compiled and prepared for publication in the December issue of The Flicker.*

# Minnesota Ornithologists' Union

## Affiliated Societies

### **CLOQUET BIRD CLUB**

Officers: President, Miss Marie Kennedy; Vice-President, Miss Annie Musto; Secretary-Treasurer, Miss Louise Stender; Editor, Miss Ellen Wilson.

Meetings are held the first and third Thursdays of each month in the Cloquet High School at 7:30 p. m.

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Meetings are held bi-monthly February through May at the St. Cloud Teachers College.

# THE FLICKER

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# THE FLICKER

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## The Blue-Gray Gnatcatcher Near St. Cloud in 1944

by

Nestor M. Hiemenz

Just south of St. Cloud, Minnesota, along the east side of the Mississippi River, in Sherburne County, is an area of small woodlots, consisting mainly of bur oaks interspersed occasionally with red and black oaks. The trees are small, only an occasional old giant towering higher than 35 feet. These woods are fairly open pasture lands, with a small amount of undergrowth, chiefly wild gooseberry and prickly ash.

It was in one of these woodlots that I first met with the blue-gray gnatcatcher on May 3, 1934, and later, on June 17, found my first nest. In the following six years none of these birds was seen, although we searched for them on many occasions, and it was not until August 10, 1941, that gnatcatchers were again seen. On that date a family party of two adults and five young was seen not far from where I had found my first nest in 1934. Returning to this same place in 1942, these birds were first noted on May 20 and, on May 26, a nest containing five eggs was located 15 feet up on a branch of a small bur oak. The young left this nest on June 17. None was seen in 1943.

In 1944, however, these birds were found to be fairly well represented, not only in the one woodlot where I had found them in previous years, but in every similar woodlot in the vicinity; and seven occupied nests were located, besides seeing several broods of young, all in an area roughly seven miles in length and a half mile in width.

The first birds, four in number, were seen on May 10, in the original woodlot where I had found them in previous years. They had evidently just returned from the south and were roving about in the tree tops, searching about the budding leaves much in the manner of warblers, or sailing out to capture a passing insect, all the while nervously twitching their tails up and down and uttering their peculiar nasal notes.

Returning to this place on May 29, I found my first nest when I saw a female carrying nesting material to her just-begun nest located 15 feet above the ground on a branch of a small bur oak.

On June 8, I could find no trace of this nest, but upon looking about I saw one of the birds carrying nesting

material to a new nest about 100 feet away. This nest (No. 1) was placed about 22 feet above the ground on a slender branch of a bur oak and was about three-fourths completed.

A short time later, that same afternoon, while walking about a quarter of a mile away in this same woods, I again heard a gnatcatcher call and, looking around, I discovered a male moving about in the tree tops. I watched the bird for some time, losing sight of it occasionally as it flew from tree to tree, but always finding it again by listening for its continuous calls. This bird remained in the vicinity of one particular bur oak tree, so I watched this tree quite closely. Finally I heard a little commotion as the female came to this tree and both birds went directly to the nest which was located 25 feet up on a branch near the top of the tree. This nest (No. 2) was a beautiful structure, resembling an oversize hummingbird's nest, but the bottom was so thin that the branch showed through at one spot. In it reposed one fresh egg.

About an hour later, at a similar woods about three miles to the south, I was rather pleasantly surprised to hear the now familiar notes of a gnatcatcher again and, after a short search, I discovered another bird. I tried to keep this bird in view, but soon lost sight of it in the tree tops. Walking about quietly, I again heard the bird and soon relocated it. This time I kept it in view and was finally rewarded by seeing it go to its nest, which was placed about 20 feet from the ground on a branch near the top of a small bur oak. I felt elated at finding my third nest of the day, but, walking around to the other side of the tree, I found that I could see through the nest. At first I thought that the nest was unfinished, but as I looked at it I saw the female bird

come, pick around, and fly away with a billful of nesting material. I tried to follow the course of flight of the bird but soon lost sight of her, so I walked back to the nest and in a minute the bird was back for more material. This time I ran in the direction she flew, but I lost her again so once more I returned to the nest. After repeating this performance seven or eight times, I had a new nest, when I saw the bird fly to the top of a large bur oak and walking over I saw the nest. This nest (No. 3) was located fully 30 feet above the ground on a branch near the top of the tree, and it appeared to be about one-half completed. As I watched, the birds came and went at intervals of about a minute or even less, both birds assisting in the construction of the nest, but the female did the major share of the work. She carried more material and spent more time working it into the nest as she wormed about rounding out the nest to fit her body. The birds brought material from different directions, the female evidently getting all of her material from the nest being dismantled while the male brought material from another place. The birds seemed to take turns at building; and one would leave soon after the other appeared, but the female, true to her sex, usually made the male wait a moment before she departed. Both birds kept up a continuous chatter, while working on the nest, and a louder, more nasal, cry usually indicated the arrival of the other bird.

At first I thought that the nest being dismantled was a nest of last year, but upon close inspection I found it to be a new structure. For some reason the birds had found this site unsuited to them and were now using this same material to build a new nest. This same procedure may have been used on the

nest found on May 29 (No. 1) thus clearing up the mystery of its disappearance.

On June 15, eight birds were seen and two new nests were discovered. Nest No. 1 now contained three eggs but as no birds were around, and the nest appeared very ragged, being partially torn down on one side, it may have been deserted. When I examined nest No. 3, I found that it had been built directly upon the remains of an old nest of last year, and it now contained at least three eggs.

In this same woodlot, where I had located nest No. 3, I next saw another bird and, as I watched it, saw its mate appear and both birds go directly to the nest. This nest (No. 4) resembled the nest of a wood pewee in location, being saddled on a branch where it forked about 25 feet above the ground, near the top of another bur oak. From the ground, the nest appeared to be almost completed.

Wondering if there were more birds in the vicinity, I drove over to a similar woods about three miles away. As I walked around slowly, I was soon rewarded by hearing the now very familiar gnatcatcher notes. After some difficulty in locating the bird, I finally found it moving about, evidently feeding, in the tree tops. It was a male. No song was heard, the only notes being the almost continuous chattering, nasal calls. I followed the bird for a half hour as it moved about in an area roughly the size of half a city block. Time and again I lost sight of it, only to relocate it again by listening for its continuous notes. Finally it flew to a small bur oak tree and began to sing. Its song was not loud, but rather pretty, beginning with a rather explosive warble and continuing on like the song of the goldfinch. As I watched, the female

flew from the tree, and the male went directly to the nest and began to incubate. This nest (No. 5) was saddled on an upward sloping branch about 20 feet above the ground. It held five eggs.

On June 22, when I again visited nest No. 4, I found it to contain four eggs and one cowbird's egg. The female was incubating and almost allowed me to touch her before she left the nest.

July 2, found me once more on the trail of the gnatcatcher, this time in a new piece of woods not visited before. It wasn't long after I had entered the woods that I heard a gnatcatcher's notes and soon located the bird. At first I saw only a male, but soon a female appeared with two or three young. The young were fully grown but were still being fed as they followed the adults, crying for food. Shifting the responsibility of caring for the young to the male, the female wandered off by herself and I happened to follow her as she was moving in the same general direction I was going. I had gone only a short ways when I was greatly surprised to see her go to a nest and settle down. Only a few minutes earlier she had been feeding young and now she was on a nest! This nest (No. 6) was placed 25 feet above the ground near the end of a branch at the top of a bur oak. It contained three eggs. This definitely proves that this pair, at least, attempted to raise two broods this season.

At another corner of this woods I again heard gnatcatcher chatter and located a family party consisting of two adults and four or five young moving about in the tree tops. The young were almost identical with the adults, except for shorter tails, but they still cried and were being fed. It was quite a thrill to meet so many of these birds at one time

as they were scattered about me in several trees and the calls came from all around me.

On July 9, I again visited the woodlot where I had found nests No. 3 and 4. I searched the woods without success and was about to leave when I heard gnat-catcher chatter and soon found a family party consisting of the adults and five young. The birds were scattered in several trees and both adults were busy feeding, the young following them closely crying for food.

Across the road, in a nearby woods, I located another bird. It was a male moving about, evidently feeding, in the tree tops. Instead of the usual chatter, the bird sang almost constantly as it moved about rather leisurely. The song greatly resembled that of the brown thrasher, but was much softer and could be heard only at a short distance. It was unmistakable, however, as every now and then the bird interjected its nasal call notes into the song, much in the manner of the scarlet tanager which usually includes its "chip-chur" notes in its song. I followed the bird for an hour as it moved about from tree to tree. It always went so far and then worked its way back to where I had seen it first. Once it sat for 15 minutes preening itself on a dead branch at the top of an oak. While here, it sang almost continuously. Finally I saw it fly down into a patch of buckwheat, and upon coming closer, I saw that it was gathering nesting material. It soon flew directly to the nest which it had just begun to build. This nest (No. 7) was placed 25 feet

above the ground on a branch near the top of a small bur oak. I had seen the female just once during the hour, when she sat for a minute in the same tree with the male, a tree some distance from the one in which the nest was located; but she eluded me rather easily as she was silent so I had to rely on the male to lead me to the nest.

When I again visited this nest on July 18, I found it evidently deserted as it seemed little further toward completion, and no birds were seen in the vicinity. However, when I entered the woods where I had located nests Nos. 3 and 4, I came upon three or four birds at one place, evidently a family party, but the young were shifting for themselves. Later I came upon single birds or pairs on several occasions, but the birds were rather quiet and kept to the tree tops making observations rather difficult. No more birds were seen during the summer although I searched for them on several subsequent visits.

In summary, all of the nests were located on horizontal branches of bur oak trees, the height above the ground varying from 15 to 30 feet. Six of the seven nests were saddled directly on small branches with a few twigs lending support to the nest. But in one instance the location of the nest on a horizontal branch just where the branch split resembled the site usually chosen by the wood pewee. The nests were deep, with thick walls but almost no floor, and were all well camouflaged with an exterior coat of lichens. St. Cloud, Minnesota.

# MINNESOTA NESTING DATA 1944

COMPILED BY

William H. Longley

Seventeen reports incorporating the findings of 35 bird-watchers are the basis of this annual recapitulation of the 1944 nesting season. Nests, or results of nesting, of 89 species are included, and, discounting estimates of large colonies, approximately 1200 individual nesting efforts were noted. Reports came from St. Paul, Minneapolis, St. Cloud and Duluth and represented observations in 11 counties. Contributors are as follows: From St. Paul, Brother Hubert Lewis and Brother J. Pius of Cretin High School, Russel Hofstead, Ross Olson, Wm. Cummings, Mr. and Mrs. Arnold Erickson; from Minneapolis, Miss Lulu May Aler, Fred Blanch, Sadah W. Field, Stanley Moore, Wallace E. Hamilton, Severena Holmberg, Mrs. Frances B. Smythe, Helen Towle, and Whitney H. Eastman; from St. Cloud, Mrs. A. J. Trainor, Julia Grebin, Alice and Fern Zimmerman, Mrs. Davis, Mr. Heimenz, and Mr. Friederich; from Duluth, Olga Lakela, Margaret Hatfield, Mary I. Elwell, Evelyn Jones, Cora Clementson, Dr. E. W. Bohannon, Alvera Larson, Mrs. W. C. Olin, James L. Bird, Jack Huele, Donna Swain, Joyce Malmrose, Katherine Lieske, and Marian McLennon; from Stillwater, George C. Kutz.

Of course, space could not permit inclusion of all nesting dates; thus, in the case of abundant species only first and last and other important dates are listed. Our object has been to outline the nesting season of each species wherever ample data were available. We regret that some material was unusable for lack of certain information. The number immediately following the species

name indicates the total number of nests reported for that species.

**COMMON LOON**, 3. Two nests found near Aitkin by James L. Bird; one egg in late May; two eggs on July 4. August 3, one young with parents, St. Louis County, Dr. Olga Lakela.

**GREEN HERON**, 5. Two nests, June 6 (downy young on the 17th), and June 26, one young, Hennepin County, Miss Aler. Two nests, July 6 and August 3, each with two large young, Ramsey County, Brother Hubert and Brother Pius. Another found by Olson.

**BLACK-CROWNED NIGHT HERON**, 100. Brother Hubert recorded an increase of 68 nests in the St. Paul colony, from 32 on June 15 to 100 on August 18.

**MALLARD**, 3. July 16, nine eggs, St. Louis County, Margaret Hatfield. Two others found by Brother Hubert and Brother Pius later were flooded.

**BLUE-WINGED TEAL**, 3. June 28, ten young, week old; June 29, six young, two days old; St. Paul, Brother Hubert and Brother Pius. July 1, seven half-grown young, Itasca County, Ellen and Arnold Erickson.

**WOOD DUCK**. May 7, 18 eggs, Minneapolis, Ross Olson.

**AMERICAN MERGANSER**, 4. Aug. 9, two broods, of six and of seven large young; August 12, August 14, two broods of six large young; all on Lake Superior, Lakela and Mary I. Elwell.

**RED-BREASTED MERGANSER**, 3. July 23, 13 downy young; August 14, eight half-grown; August 16, two half-grown; Lake Superior, Lakela and Elwell.

COOPER'S HAWK, 3. May 12, four eggs (hatched on June 9); June 10, four eggs hatching; Hennepin, Olson. July 16, two young left nest when approached by Brother Hubert and Brother Pius, Ramsey County.

RED-TAILED HAWK. April 22, two eggs, Dakota County, Olson.

BROAD-WINGED HAWK, 2. April 30, building, St. Paul, Brother Hubert and Brother Pius. May 27, (two eggs on June 3) Hennepin, Hofstead and Olson.

OSPREY. July 29, two young, Hubbard County, Whitney Eastman.

SPARROW HAWK, 5. April 28, May 4, apparently eggs, St. Paul, Hofstead. May 20, adult carried in food, St. Paul, Olson. July 2, young out of nest, St. Paul, Brother Hubert and Brother Pius. August 1, two young out, St. Louis County, Lakela.

RUFFED GROUSE, 3. July 4, two broods about five-weeks old, 11 young near Tower, seven young near Ely, Ellen and Arnold Erickson. Another found by Mrs. Olin and Katherine Lieske.

RING-NECKED PHEASANT, 4. April 9, four eggs, Ramsey, Brother Hubert and Brother Pius. May 13, nine eggs, Hennepin, Fred Blanch. May 20, eight eggs, Ramsey, Olson.

SORA. May 20, finished nest (11 eggs on May 30), St. Paul, Olson.

FLORIDA GALLINULE, 4. June 6, built, Hennepin, Eastman. June 22, two nests, nine eggs and two eggs, St. Paul, Brother Hubert and Brother Pius. June 27, four small young, Hennepin, Hofstead and Olson.

COOT, 3. May 21, building, Ramsey, Olson. June 22, two nests with eggs, St. Paul, Brother Hubert and Brother Pius.

PIPING PLOVER. July 16, two young (which may have been in migration),

Duluth, Lakela.

KILDEER, 7. May 27, four eggs, St. Paul, Olson. May 30, June 1, four eggs, Duluth, Lakela. July 10, four eggs, Minneapolis, Hamilton. July 23, four large young, Duluth, Lakela. Another found by Brother Hubert.

SPOTTED SANDPIPER, 7. May 31, June 28, four eggs, St. Paul, Brother Hubert and Brother Pius. July 1, four eggs; July 16 and 22, three and two large young, respectively; Duluth, Lakela. Another found by Aler.

BLACK TERN, 30. May 20, one egg, St. Paul, Olson. June 19 and June 20, three nests with three eggs each, Hofstead and Olson. Others found by Eastman, Brother Hubert and Brother Pius, and Olson.

MOURNING DOVE, 54. April 29, building, Minneapolis, Eastman. May 8, two eggs, St. Paul, Hofstead and Olson. August 9, two young, St. Paul, Hofstead. Others found by Holmberg, Hamilton, Blanch, Trainor, Field, Brother Hubert and Brother Pius, Hofstead, and Olson.

YELLOW-BILLED CUCKOO, 2. June 13, two eggs, Fillmore County, Mrs. A. J. Trainor and Julia Grebin. Another reported by Eastman.

BLACK-BILLED CUCKOO, 7. May 29, two eggs, St. Paul, Hofstead. Others with eggs, on May 31, June 1, June 7, found by Fred Blanch, Hofstead, Olson, and Brother Hubert and Brother Pius.

BARN OWL. July 28, large young out, Park Rapids, Eastman. This is the most northerly record of this species' breeding, according to Dr. Roberts in Audubon Magazine, Field Notes Section, November-December, 1944.

SCREECH OWL. June 3, two young out, Hennepin, Olson.

GREAT HORNED OWL. March 5, one egg, Hastings, Hofstead and Olson.

NIGHTHAWK. May 30, two eggs, St. Paul, Brother Hubert and Brother Pius.

RUBY-THROATED HUMMING-BIRD. July 20, two large young, St. Cloud, Mrs. Davis.

BELTED KINGFISHER, 3. May 13, status uncertain, Frontenac; June 5, adults carrying in food, Fort Snelling; Eastman. June 27, two large young, Dakota County, Brother Hubert and Brother Pius.

NORTHERN FLICKER, 12. May 20, two eggs, St. Paul, Olson. July 30, five young out, Duluth, Lakela. July 15, young, St. Paul, Brother Hubert and Brother Pius. Others found by Lakela, Hofstead, and Olson.

RED-HEADED WOODPECKER, 2. June 6, feeding young, St. Paul, Olson. July 6, feeding young, St. Paul, Brother Hubert and Brother Pius.

YELLOW-BELLIED SAPSUCKER. July 16, young out, Park Rapids, Eastman.

DOWNY WOODPECKER, 2. May 12, excavating, Hofstead: June 20, eggs, Brother Hubert and Brother Pius: Both in St. Paul.

EASTERN KINGBIRD, 13. May 24, building, Hennepin, Miss Aler. June 6, two eggs, St. Paul, Olson. July 16, large young, Park Rapids, Eastman. June 16, four eggs; young out, August 1 and 3; Duluth, Lakela. Others found by Brother Hubert and Brother Pius, and Hofstead.

PHOEBE, 22. April 16, building, Hennepin, Eastman. May 16, five eggs, Hennepin, Cummings. June 29, two large young, Itasca County, Ellen and Arnold Erickson. July 16, four nests with young, Park Rapids, Eastman. July 30, five young out, St. Louis County, Lakela. Others found by Aler, Moore, Cummings, St. Cloud Bird Club, Brother Hubert and Brother Pius, Hof-

stead, and Olson.

ALDER FLYCATCHER. June 24, four eggs, St. Paul, Brother Hubert and Brother Pius.

LEAST FLYCATCHER, 3. May 30, building, Duluth, Jack Huele. July 12, young, Hennepin, Sadah Field. July 29, three young out, Duluth, Lakela.

WOOD PEWEE, 3. June 27, two eggs; July 16, three young; Minneapolis Stanley Moore. August 14, one young out, Hennepin, Sadah Field.

HORNED LARK, 8. April 9, four eggs; June 22, two young; St. Paul, Hofstead. Others, all apparently unsuccessful, reported by Olson, and Brother Hubert and Brother Pius.

TREE SWALLOW, 66. April 20, building (five eggs on May 23), St. Paul, Hofstead. Brother Hubert supervised the erection of 64 houses around Fort Snelling Lake, and he reports all houses in use, four or five by bluebirds, the remainder by the swallows. Others reported by Aler, Hamilton.

BANK SWALLOW. April 29, one nest and four excavations, Fort Snelling, Brother Hubert and Brother Pius. May 21, four eggs; June 27, 33 nests with young; Dakota County, Hofstead and Olson. June 22, one building, and one with two eggs, St. Paul, Hofstead. Brother Hubert reports on an estimated 1,000 birds digging nests on June 23, Ramsey County.

ROUGH-WINGED SWALLOW, 52. May 13, excavating, Fort Snelling; June 21, building; St. Paul, Hofstead. Brother Hubert and Brother Pius estimated that 50 were using drain tiles for nesting, on May 16, Fort Snelling.

BARN SWALLOW, 4. July 18, five eggs; July 20, building; Cottonwood County, Olson. August 1, five young, St. Louis County, Lakela. August 15, young, Washington County, Brother

Hubert and Brother Pius. May 28, five eggs, Stillwater, Kutz.

CLIFF SWALLOW, 135. May 30, a colony located, 125 old nests; June 15, eight nests; St. Louis County, Lakela, Mary Elwell, Evelyn Jones. July 10, one nest built, Hennepin, Wallace Hamilton. August 15, several nests with young, Lake Minnetonka, Eastman.

PURPLE MARTIN, 13. June 19, eight nests with eggs and young; July 2, five nests with young; St. Paul, Hofstead.

BLUE JAY, 15. April 13, building, St. Paul, Hofstead. April 28, four eggs, St. Paul, Brother Hubert and Brother Pius. July 12, two young out, Hennepin, Field. Others by Hamilton, Blanch, Hofstead, and Olson.

CROW, 8. April 22, three, five, and six eggs, Dakota County, Hofstead and Olson. Also, April 22, six eggs, Brother Hubert and Brother Pius, Dakota County. April 23, seven eggs; May 13, four eggs; Ramsey, Olson.

BLACK-CAPPED CHICKADEE. May 15, eight eggs, Hennepin, Sadah Field.

WHITE-BREASTED NUTHATCH, 3. April 19, building, Minneapolis, Eastman. May 10, eggs; May 20, ten eggs; St. Paul, Olson.

HOUSE WREN, 13. May 15, building (first egg on May 29), Hennepin, Hamilton. June 3, two nests, seven eggs and four eggs, St. Paul, Hofstead and Olson. July 4, four young, St. Louis County, Hatfield. July 8, three young out; August 19, four young out; Duluth, Lakela. Others by Hamilton, Field, Marian McLennan, Hofstead, and Olson.

LONG-BILLED MARSH WREN, 2. May 13, two nests, Ramsey, Olson.

SHORT-BILLED MARSH WREN. July 21, built, Park Rapids, Eastman.

CATBIRD, 37. May 21, three nests (building, one egg, two eggs) Dakota County, Hofstead and Olson. June 12,

four eggs, St. Paul, Hofstead. July 11, two eggs, St. Cloud, Trainor. Others by Hamilton, Blanch, Olson, Hofstead, and Brother Hubert and Brother Pius.

BROWN THRASHER, 33. May 1, building, Minneapolis, Eastman. May 10, two eggs and one cowbird egg, St. Paul, Olson. June 20, one egg, Dodge County, Fred Blanch. Others by Cummings, Hofstead, Olson, Brother Hubert, Brother Pius, and Kutz.

ROBIN, 127. April 13, building; August 4, four young; St. Paul, Hofstead. July 18, two eggs, Park Rapids, Eastman. Others found by Moore, Hamilton, Cummings, Holmberg, Mrs. Smythe, Blanch, Trainor, Field, Lakela, Olson, Brother Hubert and Brother Pius, and Hofstead (74).

WOOD THRUSH, 4. May 13, building, Fort Snelling, Cummings. Also May 13, two eggs, Fort Snelling, Brother Hubert and Brother Pius. May 23, three eggs and six cowbird eggs, Hennepin, Fred Blanch. June 3, young, Hennepin, Sadah Field.

VEERY, 3. June 3, two eggs and one cowbird egg, Duluth, Donna Swain and Joyce Malmrose. July 11, five large young, Duluth, Cora Clementson. July 21, two young out, Duluth, Dr. E. W. Bohannon.

BLUEBIRD, 22. May 9, building, St. Paul, Hofstead. May 23, five eggs, St. Paul, Olson. June 27, five eggs, Hennepin, Hofstead and Olson. Other nests found by Hamilton, Olin, Brother Hubert and Brother Pius, Hofstead, and Olson.

RUBY-CROWNED KINGLET. June 17, young, St. Cloud, Mrs. Davis, Mr. Friedrich, and Mr. Hiemenz.

CEDAR WAXWING, 3. July 6, two eggs, St. Cloud, Mrs. Davis and Trainor. July 31, building (four eggs on Aug. 6), Duluth, Mrs. Olin. August 12, one

young out, Lake County, Lakela.

STARLING, 8. April 25, building; June 24, large young; St. Paul, Hofstead. May 16, young, Hennepin, Cummings. Others by Hofstead.

YELLOW-THROATED VIREO. June 27, young, Hennepin, Hofstead and Olson.

RED-EYED VIREO. June 20, three young, Hennepin, Stanley Moore.

WARBLING VIREO, 5. May 26, eggs, St. Cloud, Mrs. Trainor. June 1, June 11, eggs, St. Paul, Brother Hubert and Brother Pius. June 23, three large young, St. Paul, Hofstead. June 27, two young, St. Paul, Olson.

TENNESSEE WARBLER. July 26, juvenile found dead, Duluth, Hatfield.

NASHVILLE WARBLER. June 8, five eggs (hatched June 18), Duluth, Donna Swain and Joyce Malmrose.

YELLOW WARBLER, 20. Building: May 21, St. Paul, Hofstead; May 26, St. Cloud, Mrs. Trainor; May 31, Duluth, Jack Huele. Eggs: St. Paul, June 2, three eggs; June 21, three eggs; Hofstead. Young: Fillmore County, June 14, five just hatched; St. Paul, June 25, four left nest, Brother Hubert and Brother Pius; Cottonwood County, five young left nest, July 18, Olson; Duluth, July 13, three young out, Lakela. Others found by Aler, Trainor, Hofstead, Olson, Brother Hubert and Brother Pius.

MYRTLE WARBLER. July 22, adult feeding young cowbird, Park Rapids, Eastman.

NORTHERN YELLOWTHROAT, 2. June 21, three young, St. Paul, Brother Hubert and Brother Pius. July 17, adult feeding young cowbird, Park Rapids, Eastman.

REDSTART. August 7, feeding young cowbird, Hennepin, Sadah Field.

ENGLISH SPARROW. Reported only

by Eastman, July 17, building, Park Rapids.

BOBOLINK, 3. June 15, one egg; July 9, four young; St. Paul, Brother Hubert and Brother Pius. July 8, four young, all just recently killed by an unknown animal, Duluth, Alvera Larson and Lakela.

MEADOWLARK, WESTERN? July 22, five eggs, Cottonwood County, Olson.

YELLOW-HEADED BLACKBIRD, 5. May 13, five nests, one with one egg, Ramsey, Olson.

RED-WINGED BLACKBIRD, 70. May 13, two nests with three eggs each, St. Paul, Olson. July 1, three eggs, Minneapolis, Hamilton. July 1, three nests with eggs, two nests with young, Duluth, Lakela. Others were found by Aler, Hamilton, Blanch, Eastman, Hofstead, Olson, Brother Hubert and Brother Pius.

ORCHARD ORIOLE, 6. Nests with young reported by Hofstead, Olson, and Brother Hubert and Brother Pius, June 14 to June 27.

BALTIMORE ORIOLE, 10. May 20, building, Minneapolis, Eastman; June 25, two young out, Duluth, Hatfield. July 16, young out, Park Rapids, Eastman. Others found by Aler, Field, Hofstead, Brother Hubert and Brother Pius.

BREWER'S BLACKBIRD, 42. May 14, building; June 7, three eggs; St. Paul, Hofstead. June 8, three young and one egg, St. Paul, Olson. Others by Brother Hubert and Brother Pius, Hofstead, and Olson.

BRONZED GRACKLE, 26. April 22, several building, Minneapolis, Eastman. May 1, six with eggs, St. Paul, Cummings. May 20, six with eggs and young, Brown County, Hofstead. Others by Aler and Hofstead.

COWBIRD. Forty-five nests of sixteen species were parasitized. They are: Brown Thrasher, 4; Bluebird, 4; Wood Thrush, 2; Yellow Warbler, 4; Myrtle Warbler, 1; Yellowthroat, 1; Redstart, 1; Brewer's Blackbird, 5; Red-winged Blackbird, 6; Cardinal, 1; Rose-breasted Grosbeak, 1; Indigo Bunting, 1; Goldfinch, 1; Chipping Sparrow, 9; Song Sparrow, 3; Catbird, 1.

CARDINAL, 2. May 16, one cowbird egg, Hennepin, Cummings. May 23, one young out, Hennepin, Miss Aler.

ROSE-BREASTED GROSBEAK, 7. May 22, building, Minneapolis, Hamilton. May 29, three eggs and two cowbird eggs, St. Paul, Hofstead. July 29, one young out, Duluth, Lakela. Others by Hamilton, Olson, Brother Hubert and Brother Pius.

INDIGO BUNTING, 5. June 22, two young cowbirds, St. Paul, Hofstead. Four nests noted by Brother Hubert and Brother Pius, from July 25 to Aug. 24, contained young, St. Paul.

GOLDFINCH, 180. Brother Hubert and Brother Pius found 153 nests, from

July 14 to September 14. All but nine were in thistles, St. Paul. Others found by Moore, Hamilton, Field, Hofstead, Olson, and Kutz.

CHIPPING SPARROW, 46. May 13, two eggs, St. Paul, Hofstead; Cummings also found one with two eggs on this date. August 19, two young and one young cowbird, St. Paul, Hofstead. Others were reported by Aler, Cummings, Helen Towle, Mrs. Davis, Mrs. Trainor, Field, Eastman, Lakela, Hofstead, Brother Hubert and Brother Pius, and Olson.

CLAY-COLORED SPARROW, 5. May 23, four eggs, St. Paul, Hofstead. July 7, July 15, July 18, each with eggs, Brother Hubert, St. Paul. August 4, four eggs, Duluth, Mrs. Olin.

SONG SPARROW, 10. May 21, two eggs and three young, Dakota County, Olson. May 24, four eggs, Minneapolis, Fred Blanch. May 30, one egg, Duluth, Mrs. Olin. August 30, four eggs, St. Paul, Hofstead. Others were found by Hamilton, Lakela, Brother Hubert and Brother Pius.

Saint Paul, Minnesota

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*In the past the publication of THE FLICKER has been delayed, in part, by a scarcity of articles or by articles coming in late. In order to get THE FLICKER out on schedule hereafter, the editors urge you to contribute regularly articles and notes. Also it will be necessary to have deadlines for the acceptance of manuscripts for publication in a certain issue. The deadline for the March issue will be March 25, for the May issue, May 1st.*

# Strange Actions Of A Migrating Flight Of Lesser Scaups

by  
Albert H. Hochbaum

On the evening of November 14, we witnessed a most remarkable movement of waterfowl through Delta, Manitoba. I wonder if, on November 15, you received any reports of a mass movement of ducks from the north, for the birds moving from here pass through Minnesota. The flight was not so remarkable because of its number—we have seen as heavy flights other years—but because of their behavior when passing over Delta. I can't help but wonder what sort of weather conditions greeted them in Minnesota, for it appeared that they were heading directly into a region of storm.

We had a snowstorm on November 2, the temperature dropped to below freezing, and the following morning the marsh was partly frozen over. The bluebills, which usually are with us in strength by the middle of October, had delayed their southward movement and it was not until the 3rd of November that they came in, and there were flights from the north coming into the marsh on the 4th and the 5th. From the 5th until the 14th there was little movement from the north and, I believe, little movement out of the marsh to the south. After the 5th it grew milder and the marsh opened up again. We didn't see the sun during the first two weeks of the month, and much of the time there was heavy fog.

Shortly after 4 p.m. on the afternoon of November 14, we were wondering if it was worthwhile walking down to the edge of the bay for a little shoot,

but after looking things over for ten minutes or so, it was clear that it was a poor bet. Then at about 4:30 p.m. a big band of bluebills came high out of the north, heading directly to the southeast, as the transients do when they pass through. We watched to see if they passed over the marsh, but far over the bay the flock boiled up, circled, then turned north, passing us again and heading out over the lake. Now, suddenly, there were bands of bluebills, as well as a few flocks of mallards and a few other species, everywhere coming out of the north and crossing the marsh to the southeast. Then we noticed a strong northward movement of birds, a flight just as heavy—it seemed heavier—as the one coming from the north. These birds crossed the lake ridge and passed north over the lake.

Both the north and south flights gained in intensity as we watched, until by 6 p.m. their numbers seemed unbelievable. Flocks were everywhere from 100 to 3000 feet high; looking in any direction one could see 20 or 30 flocks with a glance.

It was very dark and stormy in the southeast, so that we could not see whence the north-bound birds came. It was clear that they were not rising from the marsh; the north-bound birds were very high, and we saw none of the local birds take flight. Several more flocks coming from the north were seen to swerve far south over the marsh and fly north again. I believe the north flight

was made up of these flocks which turned after they had crossed the marsh. None of the flocks alighted.

The sky was completely covered with a heavy cloud layer at, I would guess, about 5000 feet; there was a stiff wind from the northwest and the temperature was just below freezing.

Until 6 p.m. the two lines of flight continued, one flying to the southeast, the other to the northwest. Shortly after six o'clock, however, as the numbers still swelled, there seemed to be great confusion. No longer were there two clear directions of flight, but over the marsh the flocks were moving to all points of the compass, so that it made one dizzy trying to follow their movements. But the birds were not circling, as they might if attempting to gain altitude.

Shortly after 6 p.m. the clouds broke to the northwest over the lake and we saw the sun for the first time in two weeks. The clouds were moving fast with the wind, and soon the sky was broken above, making the heavy banks in the east seem even darker. About 6:30 p.m. the movement of birds finally resolved into a clear line of flight, all moving directly to the southeast. This south flight continued until just before dark, when apparently all had passed on and the sky was clear of birds.

It was clear that the flight was made up entirely of northern birds passing through. We saw none of the local birds leaving the bays, and the next morning, although the marsh had partly frozen over again during the night, the local population was about the same. And these birds are still with us.

I have never seen anything like this. When local birds begin their movement, one sometimes sees preliminary flights about the marsh. And, as they leave with a north wind, they move to the north when taking off and may fly a short distance in that direction before

turning to ride the wind south. But always before, when the mass movement of late bluebills passes through, they go right on by without turning over the Delta Marsh.

Again, the late bluebill flight always takes place under a clear sky and a rising barometer. The barometer was rising gradually on the evening of the 14th, but the sky was not clear except for the break in the clouds just before dusk.

This is worth a speculation and here is mine: Somewhere to the northwest the sky began to break and show clear for the first time in two weeks, inducing birds in that region to begin the southward movement. With a strong north wind behind them these birds were travelling faster than the weather and when they reached Delta they found it completely clouded over and threatening ahead. The birds passed over the marsh and into the threatening south, then swerved to fly back over the marsh and lake in mass hesitation. In effect it was "shall we go on with the journey or stay here." Finally just at dusk the clear sky caught up with them, a decision was reached, and the birds passed on to the south.

The break in the sky was a comparatively narrow rift; it soon clouded over again; and it was cloudy all the following day, the reason, perhaps for the failure of our local birds to join the flight.

I thought you might be interested in this, for the birds were moving your way, and that you might receive some reports that are related to this flight. I can't help but wonder what sort of weather the birds ran into, for a storm seemed brewing to the south, and in their flight they were rapidly overtaking the weather. —Delta Duck Station, Delta, Manitoba.  
**Added Later.**

"It was cloudy all of the 15th, and there was no movement of ducks, although all day whistling swans passed through traveling in a southeasterly direction. On the 16th it cleared just before noon and the sky was cloudless at sunset. In a large hole in the bay sat about 300 bluebills which, just before sunset, took to the air and departed southward. Several other south-bound bands of ducks were seen that evening and, since on the following day there was hardly a duck left in the marsh, I believe the evening of the 16th marked the departure of the Delta bluebills."

**Note:** In quest of information as to the advancing movement of the duck flight described above, letters were addressed to the Refuge Managers at the Mud Lake and the Tamarac National Wildlife Refuges, both of which are in Minnesota and in the possible line of flight. From Carl B. Vogen at Mud Lake came the following: "The influx

of scaups in this area occurred from October 15 to November 10, but there was no noticeable increase during the period in question. There was a very light snowfall during the day of November 14, and the sky was overcast all day on November 15, but there was no precipitation."

John M. Dahl, Manager at the Tamarac Refuge, replied in part as follows: "The weather on the 15th and 16th was cloudy and still. The temperature did not vary much during the night or day and was above freezing. The ducks, mostly lesser scaups, were noticed here in numbers on the 16th and more on the 17th. But I learned from another Warden that the flight of ducks in which you are interested came through farther west." This would be in the eastern Dakotas. Apparently, there was no real storm south of Canada and that the south flight of ducks passed south through the Dakotas. **Thos. S. Roberts.**

# NOTES OF INTEREST

THE EASTERN RUBY-CROWNED KINGLET NESTING IN MINNESOTA—On June 17, 1944, Mr. George W. Friedrich and the writer visited the Veterans Administration Facility at St. Cloud where Mrs. Davis, wife of a resident physician, reported that she had seen a pair of ruby-crowned kinglets repeatedly among the evergreens in the garden at the hospital and believed they were nesting as the male was in full song.

As we drove out we discussed the possibility of locating a nest as there were no definite records of this species nesting even in the extreme northern evergreen section of Minnesota, much less as far south as St. Cloud where the only evergreens are those that have been planted. Needless to say we had little hope of seeing the birds and less of finding the nest.

The day was hardly one to look for so tiny a bird as the sky was overcast and a strong wind was blowing. Nevertheless after reaching our destination, we spent about an hour walking about slowly among the evergreens looking and listening in vain for signs of kinglets. Finally Mr. Friedrich decided to return to the house to talk to Mrs. Davis, but I decided to try once more to locate the elusive birds.

As I moved about slowly I jerked up suddenly as I heard the song of a kinglet, not the full song, but enough of it to make me feel sure that our quest was not to be in vain. After about ten minutes of searching and listening, hampered no little by the strong wind, I finally located the bird, which, as indicated by the song and now proved by the bird itself, was a male ruby-crowned kinglet. The bird moved about in the tree-tops both deciduous and evergreen evidently feeding. Its actions suggested those of the blue-gray gnatcatcher as it moved somewhat nervously, occasionally singing without interrupting its search for food. Several times I lost sight of the bird as it flew from tree to tree, but each time I relocated it by listening for its song. The bird was now gathering food, and my pulse quickened as I saw it fly into a thick balsam, disappear for a moment, and reappear with its bill empty. At the same time I saw its mate for the first time as it also carried food to the same spot. I scanned the tree carefully through my binoculars and sure enough, about twelve feet from the ground and four feet from the top, I saw a dark object against the trunk in the thickest part of the tree. Here at last was the nest. I fairly shook with anticipation as I climbed the tree to investigate.

The nest was a beautiful little cup of green mosses, resting against the tree trunk and semi-pendant among the thick growth of twigs. It was well lined with feathers and contained 3 newly hatched young and 3 added eggs.

I descended the tree and shouted for Mr. Friedrich who came quickly with Mrs. Davis, and we stood and watched for several minutes as both birds came and fed the young. The full wonderful warbling song of the male was heard only once as the bird stopped for a minute in a nearby tree-top after carrying a billful of food to the young.

The tree in which the nest was located was in an area of the garden where only spruce and balsams were growing, and this region, limited as it was, presented a truly boreal appearance, a factor which evidently influenced the birds to remain to nest so far south of their usual breeding range.

On June 24, I was disappointed when Mrs. Davis informed me that the nest had been destroyed. She had watched the nest on the 18th when both birds were busily engaged in feeding the young. After being away on the 19th, she returned on the 20th but saw no kinglets and the presence of three grackles in the nesting tree aroused her suspicions. On subsequent visits no birds were seen, so she investigated to find the nest empty and partially destroyed, barely hanging by one twig. The evidence seems to point clearly to the grackles as the culprits as these obnoxious birds are all too common here.

The nest, as presented to me by Mrs. Davis, looks quite different than when first seen. The side walls and bottom are very thin, but this is due to the fact that the foundation, evidently of coarser materials, is lacking. The outside measurements of the nest are three inches in diameter and one and three-fourths inches in depth. The inside measurements are three-fourths inch in diameter and an inch in depth. At places the top rim is about three-fourths of an inch in thickness. Rootlets make up the main framework of the nest, but the body is composed of mosses and wool. There are a few small feathers in the nest; most of the lining is gone.

On June 30, Mrs. Davis reported that she feels sure that she saw the female carrying nesting material but she was unable to locate the nest. The male was still about and sang every morning, but the song was more subdued and shorter in length. On July 10, we made an unsuccessful search for a nest. In over an hour's time we saw the birds only once when both of them were seen in a tall elm. However they immediately were lost from view and were not seen again.  
**Nestor M. Hiemenz, St. Cloud, Minnesota.**

**BIRDS OF THE MINNESOTA VALLEY**—The valley of the Minnesota River from Fort Snelling to Shakopee provides a rich field for the observation of bird life, and its proximity to the Twin Cities makes it a popular place for the amateur ornithologist to study in the field. Here the valley is a mile wide with high steep bluffs, but the present Minnesota River, though a good-sized stream, occupies only a small part of it. Even before the last glacial period this river bed existed. About 20 thousand years ago a huge torrent of icy water from the glacial Lake Agassiz poured down this river course, and after the last ice sheet retreated northward, the river subsided leaving a broad valley with marshes, farmlands, lakes and wooded areas to provide shelter and habitat for many kinds of birds. Some days over a hundred species may be listed, and 201 species have been seen in the valley and surrounding territory in the course of a year.

The beauty of the landscape along this ancient river is ever a delight. The changing lights and shadows along with the change of season and difference in time of day make constantly a new picture of the distant hazy high bluffs and the broad lowlands over which the clean sweet wind sweeps to bring a satisfying feeling of tranquillity and peace. Always there is the expectation of seeing something new and interesting and usually the expectation is realized. It is a truly fascinating place, and I have spent hundreds of hours there in all kinds

of weather, beautiful sunny spring days and the golden days of autumn, in wind and rain, when it was 90° in the shade and 10° below zero and always experienced a new delight with each visit.

The first days of April are among the most thrilling for bird students when newly arriving birds appear hourly. April 6, 1944, was one of many such days. I stopped to find the Lapland longspurs that for many years, during migration, have visited the same small piece of prairie land near the river. They always seem to be unmindful of the training planes that rise from an airport near by. Watching a swirling flock of them, I looked up to see the air filled with snow geese, small groups huddled together in frightened flight. Evidently there had been several large flocks, but planes had just roared up to break their formation. For several minutes they kept coming, some flying near the ground, others much higher. The horned larks and both meadowlarks share this field with the longspurs. The horned lark may be found nesting there in March.

Due to the late season the lowlands usually occupied by ducks were frozen, but the river was open and I had a grandstand view of mallards, ringnecks, scaup, gadwalls, baldpates, shovelers, blue-winged teal, and coots. They were sailing downstream while I stood behind a bush just a few feet from them. Each time they got to the Lyndale Avenue bridge they flew back upstream and sailed down again. Song birds were all about me; tree sparrows occasionally sang their sweet tinkling song; often goldfinches passed in dipping flight; the red-bellied woodpecker "churred" in the tree overhead while the song sparrow patiently tried to be heard above the mixed chorus of a large flock of rusty and redwing blackbirds.

All day long, without ceasing, hawks migrated, sailing with the wind, so high that some could not be identified, but there were roughlegs, redtails, and at least one duck hawk.

In a shallow patch of water adjacent to the river there were about fifty American and several red-breasted mergansers. They swam and courted while a few black ducks stood stolidly on the ice near them. Long lines of double-crested cormorants looked for a place to stop and fish; ringbilled and herring gulls in slow-winged graceful flight dipped for their dinner; and great blue herons stood humped motionless at the edge of the rushes, ready to pounce on any unlucky creature that would take the place of the fish locked beneath the ice. Eight whistling swans flew by looking for a landing place. When there are so many exciting birding adventures, the common birds that have been here all winter are hardly noticed, but they were about this day to swell the list to 54.

As spring advances the parade of birds goes on, sparrows, rails, bitterns, swallows, vireos, shorebirds, those winged blossoms the warblers, and many other species arrive to stay and nest or go on, as the case may be.

Wanderers from their usual migratory lanes may stop for a short time or pass over the valley. Breathless and unbelieving, I have watched 47 sandhill cranes, their plumage shimmering in the sun, their flight steady and straight. Last spring 19 willets paused before an electric storm that filled the sky and reflecting waters with thunderous beauty. They stood on a mud bar facing the rising storm, plaintively saying "Willie." Now and then they rose and circled displaying the striking black-and-white pattern on their wings. In flight they

uttered a sweet melodious call.

Often I have been surprised at the interesting actions of familiar birds. Once a bald eagle whipped out from a wooded bank causing swarms of ducks to rise instantly and skitter helter-skelter across the water. Another time, a few yards away, an osprey dropped and bathed. On a bright spring day I saw thousands of double-crested cormorants swing in lazy spiral circles to form a giant pillar of birds that reached to the blue of the soft dreamy sky.

Beautiful pictures linger in my memory: a pair of wood ducks drifting close at hand among the trees of a flooded area; 300 whistling swans resting in the slanting rays of the setting sun that touched them with rose and gold; the courtship at those seemingly unreal but stunningly beautiful creatures, the horned grebes; the effortless flight of some turkey vultures that rose from the roadside to soar higher and higher in great wide sweeping circles until they disappeared.

There are dozens of springs along the valley banks, some of them providing a goodly stream of open water in winter. Here in the shelter of the glens through which the streams run may be found winter visitors from the north, the lovely pine and evening grosbeaks, redpolls, purple finches, waxwings, juncos, and others. Some seasons the fierce goshawk comes to prey on the quail and pheasants as well as small birds.

Of course all the common birds are there. Because of the scarcity of birds, they take on added importance during these cold wintry days and help to shorten the interval between the last of the fall migration and another interesting April day. Mary Lupient, Minneapolis, Minnesota.

NOTES ON GOLDFINCH NESTING, 1944—Last Year, Brother Pius and I became interested in the nesting habits of the goldfinch. We were particularly impressed during our field trips by the large number of nests built in thistles. This year, in order to confirm these findings more accurately, we undertook to investigate every thistle which seemed a possible goldfinch nesting site. The result of this examination has been the discovery of 152 nests, of which all but seven were found in the thistle, *Cirsium altissimum*. This number might have been greater but for the fact that many nests were destroyed by squalls during the summer; and also, because this year's crop of thistles was neither so hardy nor numerous as was that of the previous year. Of the seven other nests, one was in a golden rod, one in a box elder, one in a wild cherry, one in a Lombardy poplar, two in sumacs, and two in small American elms. One hundred and forty-two of the nests were within the city limits of St. Paul; six were in rural Ramsey County; and four in Dakota County. Only nests containing eggs, or young, or showing signs of immediate occupancy, were counted. Each nest was visited at least twice.

The first nest, in the first stages of construction, was found this year on July 14, 16 days earlier than the first nest examined the previous year. Seventeen days elapsed before the appearance of the first egg in this nest. Another nest begun on August 15 contained five eggs on August 23. Nest building for the goldfinch cannot begin earlier than July 14 and seems to reach its peak about August 15. At present, September 15, we still have several nests under observation. One has three eggs; the others have unfledged young.

We find that all eggs are a light flesh or cream color when fresh, and that

they become bluish in tint as incubation advances. Only once during this two-year study has a cowbird's egg been found in a goldfinch nest.

According to our observations, the toleration distance among nesting goldfinches can be as little as 50 feet. Of this, there were five instances. However, the goldfinch will build within a few feet of a wrecked or abandoned nest of another goldfinch. Towards other species of birds, the goldfinch is apparently either neighborly or indifferent. In one case, a nest of young indigo buntings occupied the nether branches of a thistle, while two feet above was a nest of young goldfinches.

It is interesting to notice that goldfinches are not the only birds that have made an Elysium of the thistles. Song sparrows, clay-colored sparrows, and indigo buntings are also frequent and successful builders in them. **Brother Hubert Lewis, St. Paul, Minnesota.**

**WHITE-WINGED SCOTERS ON THE MISSISSIPPI AT MINNEAPOLIS**—With gasoline rationing we were unable to get out to see many ducks this spring, but on April 8, 1944, while hiking along the Mississippi River between the Lake Street and the Ford Bridges we saw a flock of four white-winged scoters. They stayed in a small compact flock on the edge of a much larger flock of lesser scaups and American golden-eyes. A small flock of pintails and two redheads (on March 23) were also seen along this stretch of river. **Mr. and Mrs. Kenneth D. Carlander, St. Paul, Minnesota.**

**AN UNUSUAL BROWN THRASHER SONG**—Just as I got home from work in the middle of our May snowstorm, May 4, 1944, I heard a bird song that I did not recognize at all. It was a clear, forceful song with a rounded, somewhat thrush-like quality. The song was repeated several times, but I had some difficulty in finding the bird. Finally there were a couple of "chewink" call notes, and I recognized the song as that of a towhee. But I could find no towhee. The song was repeated again and I finally located the songster, a brown thrasher. I could hardly believe that the song had come from him, even after he mixed it in with his usual thrasher song. The quality of the borrowed towhee song was much more full than any other thrasher calls. **Kenneth D. Carlander, St. Paul, Minnesota.**

**BEHAVIOR OF THE RUFFED GROUSE**—While walking through a clearing in the woods near the campus of the college of St. Benedict at St. Joseph, Minnesota, on July 19, 1944, I was startled by a clear sharp hiss rising from the ground near me. I stopped and looked around, but saw nothing. As soon as I moved there was another sharp warning hiss immediately followed by a whirl of wings as a brood of ruffed grouse, not quite the size of quails, flew up almost from under my feet into a low leafy tree, where they immediately "froze." As nearly as I could count, there were 12 young. A short distance away was the excited hen clucking and displaying her ruff to its fullest extent. As I moved toward her she clucked louder and kept moving away from the tree apparently trying to lure me away from her young. Several times I moved back toward the tree, and each time she renewed her efforts to draw me away by running ahead of me and then leading me away. When after a period of ten minutes the young were still motionless in the tree, I moved on and only after the trees hid my presence did I hear the reassuring cluck that was for them the signal of safety, the "all clear." **Sister Estelle, College of St. Benedict, St. Joseph, Minnesota.**

**EVENING GROSBEAKS ON OUR CAMPUS**—On November 30, 1941, a single male evening grosbeak was seen flying from tree to tree on the St. Benedict College campus. During the winter of 1942-43 a pair was seen now and then. This last winter three pairs made their appearance on December 10, and students and faculty were interested in the habits of these beautifully colored birds. Daily they were seen feeding on the berries of the red cedar and on the seeds of the honey locust. They would pick up the locust pods in their strong beaks and crack them to get at the seeds. The cracking of these pods could be heard at a distance of some 20 feet. After the snowfall on February 5, they did not appear until February 18, when their handsome black and gold plumage against a snowy background again attracted us as they fed under their favorite locust tree. During the heavy snowfall of February 26, they disappeared for five days, but during March they were seen each day until March 23, when they left the campus and did not return. **Sister Estelle, College of St. Benedict, St. Joseph, Minnesota.**

**A REVAMPED YELLOW WARBLER'S NEST BECOMES THE HOME OF KINGBIRDS**—During the summer of 1940, Hilltop Acres had an interesting yellow warbler's nest. It was exceptionally well built, in the fork of a young oak about three feet high. After the four warblers left, I counted my interest in this spot on the acreage at an end. However, because of most happy memories, I continued to include it in my many wanderings. On one such trip I found the nest in exactly the same fork of the oak, but quite completely rebuilt and considerably enlarged. The outstanding material used was a white cotton-like substance. In time three eggs much larger than the yellow warbler's were laid. These did not help me in the identification of the new tenants. When the female was flushed from the nest, I realized she was one of a pair of birds which I had observed for some time as fluttering over and protecting the crest of the hill. I did not see these kingbirds rebuilding the nest, but they were the ones that used it.

When the eggs began to hatch, it was approaching that part of August when, in northern Minnesota, the nights become very chilly. One egg failed to hatch. Both the young appeared very weak. Their feathers just seemed to refuse to grow. Before long there was but one baby kingbird, and not too long thereafter the parent kingbirds no longer hovered over the crest of the hill. The lone young was left dead in the revamped nest. **Mrs. Paul A. Becker, Owatonna, Minnesota.**

**JUST A LITTLE RED BAT NOT A BIRD**—One of the members of the St. Cloud Bird Club was out looking at flying things on August 15, 1944, near her home in Benton County. She spied a ball of fuzzy red fur attached to a raspberry bush, swaying in the breeze. Not wishing to disturb the slumbering softness, she cut the twig and proceeded to carry it home. The red fur came to life, yawned, and stretched itself into a beautiful red bat. It was not a bird at all, but the rarest of bats in this territory. Mr. George Friedrich adopted it. The bat is now mounted and has been given a place of honor in the museum of the St. Cloud State Teachers College. **Edited by Monica Misho, Sauk Rapids, Minnesota.**

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# A BIRD STUDY ROMANCE

by Fern Zimmerman

(This bird-riddle was composed as a parlor game for a recent party given by the author. How many blanks can you fill? Answers may be found on page 89.)

John chanced to meet a pretty girl by the name of Miss Mary (a familiar black-crowned sparrow) (1)———. Both were lovers of nature. They took long walks together into the (a very beautiful duck) (2)——— to study birds, trees, and flowers. John was a (kind of grouse) (3)——— and taught Mary the lore of the out-of-doors. One day when they were taking pictures, they photographed a beautiful (kind of thrush) (4)——— tree and a fire-scarred white (kind of warbler) (5)——— tree. They sat under a great (kind of grouse) (6)——— (sparrow with chestnut cap) (7)——— and had a little (large, handsome warbler) (8)———. John said, "You are a (member of the rail family) (9)——— girl."

With a (woodpecker) (10)——— of a smile, Mary said, "You mustn't talk baby-talk to me. It makes a big man like you sound (some of them have black bills) (11)———." But John did not care how he sounded. He knew right then she was (a thrush) (12)——— him of his heart.

The wedding (yes, it was not long after that they were married) was at a (kind of sparrow) (13)——— service. The bride was lovely in her (kind of owl) (14)——— wedding dress; the groom handsome in his (a heron) (15)——— suit. All the guests were (a great black bird) (16)——— about the striking couple. A pretty (diving duck) (17)——— girl friend, namely (a flycatcher) (18)——— was bridesmaid, and (a woodpecker) (19)———, a friend of the groom, was best man.

Their first dreams for the honeymoon were to travel to two southern states (green-backed warblers) (20)——— and (21)———, then to the city of (oriole) (22)———, then to spend two weeks at the Atlantic (kind of sparrow) (23)———. Gas rationing could not be ignored, though, so the earlier plans were abandoned and with no regrets, for they went instead to (the necklace warbler) (24)———.

The traveling outfit of the bride was an attractive (duck) (25)——— blue suit and a jaunty little (colorful crested sparrow) (26)——— hat. Because I did not notice the attire of the groom, I may be mistaken on this, but I believe he wore a (kind of teal) (27)——— brown suit and that his tie was (a sandpiper) (28)——— with (kind of martin) (29)———.

A pair of old shoes dangled from the back of the car and bands of (member of the sparrow tribe) (30)——— gaily decorated the

front of the car. John and Mary had managed to (water fowl) (31) ——— most of the rice thrown at them.

One evening near Grand Marais, Mary had an experience that might have proved disastrous. They had finished their supper, which had consisted of salad, bread and butter, smoked (gull) (32) ———, onions, milk and cookies. Mary had picked a bouquet of (a warbler) (33) ——— violets for a touch of color for the table. It had been only a (tern) (34) ——— meal, but John said it was food fit for a (rail) (35) ———. Mary decided to explore all by herself a pretty, little valley. Dusk was just beginning to fall. The trail descended steeply. Suddenly she uttered a breathless, little (an owl) (36) ——— as people do when they (small game bird) (37) ——— with fear. She ran back to John and when she got there she certainly was a- (bird found on rocky, precipitous shores) (38) ———. She was so choked with fear she could scarcely (most graceful in flight of all birds) (39) ———. When she finally told John that she had seen a bear, he laughed and said, "What a little (water fowl) (40) ——— you are! I saw a (puddle duck) (41) ——— go down that path just two or three minutes ago. He looked to me like a WPA worker, and he looked to you like a bear." Mary was not in the (a sandpiper) (42) ——— convinced. However, she did admit to herself, that since there were Indians in the woods, it might have been an (sea duck) (43) ——— or her husband out to (a shore bird) (44) ——— --it was just that morning a game warden had told John that the Indians take venison any time of year.

Anyway, it was soon forgotten and she with John were (a swan) (45) ——— and (a vireo) (46) ——— a little ditty, "nutty as a fruit-cake and crazy as a (water bird) (47) ———.

The (bird that looks like a cigar with wings) (48) ——— days flew and soon they had to travel the (nondescript-looking member of the sparrow family) (49) ——— roads of the backwoods to the paved highway that led them again to Minneapolis. Their honeymoon had been a (bird that sings from high in the air) (50) ———.

They are (a thrush) (51) ——— happy. May they always be so, and someday may the (great white bird) (52) ——— sit on their chimney.

## BOOK REVIEWS

*CANADIAN BIRDS* by L. L. Snyder. *Canadian Nature Magazine*, 177 Jarvis Street, Toronto, Ontario. 32 pages, \$.35.

L. L. Snyder, Assistant Director, Royal Ontario Museum of Zoology, and T. M. Shortt, artist at the same institution, have collaborated in word and sketch to produce a uniquely interesting and worthwhile booklet on Canadian birds.

The approach to the subject is ecological or according to habitat groupings. There are 15 pages of text and 15 of illustrations, a page of text and a page of illustration being devoted to five characteristic birds of 15 different habitats for a total of 75 bird species.

Some of the habitats discussed are alpine forest, prairie pond, northern forest, eastern sea-coast, and tundra. The five birds discussed and illustrated for the tundra are snow bunting, Lapland longspur, semi-palmated plover, snowy owl, and willow ptarmigan. A short paragraph introduces the reader to the characteristics of the tundra habitat, and then follow five still shorter paragraphs, one for each of the birds. Although the economy of words is great, the author conveys a surprising amount of information about the habitat and each of the birds in a most pleasing style. Likewise the artist has deftly caught the attitudes and appearances of the birds in his pen-and-ink sketches. The 14 other habitats and their birds are discussed and illustrated in the same manner as are the tundra habitat and its birds.

The booklet is especially recommended for use by grade and high school teachers and for boy and girl scout groups. Arnold B. Erickson.

*REPTILES AND AMPHIBIANS OF MINNESOTA* by W. J. Breckenridge. The University of Minnesota Press, Minneapolis. 202 pages, \$2.50.

It is the ambition of most bird lovers to be naturalists in general, to know something about flowers and trees, butterflies and moths, mammals, fishes, and reptiles and amphibians. Various books on these subjects published by the University of Minnesota Press and by the Minnesota Division of Game and Fish have helped to make us better-rounded naturalists. The latest addition to this series of publications, *REPTILES AND AMPHIBIANS OF MINNESOTA* by W. J. Breckenridge, Curator of the Minnesota Museum of Natural History, will, we are sure, create among the students and the general public an increased interest in this somewhat neglected group of animals.

In the past they have been neglected by many persons interested in natural history because most of them lead obscure secluded lives, or because superstition said they were dangerous or poisonous. True, they are not colorful in the sense that birds are colorful; they are not beautiful in the sense that wild flowers are beautiful, but they have color and beauty of their own, and a certain mysterious fascination resulting from knowledge—written and verbal and mostly ficti-

tious and imaginative knowledge that has been built up through countless years of misunderstanding.

For the last nine years Dr. Breckenridge has been collecting reptiles and amphibians in Minnesota, has been studying their life histories and habits, their distributions, and their relations to other vertebrates. When he began his work, herpetology in Minnesota was practically without shape or form. We knew that a few common species occurred, but we knew practically nothing else.

Now, anyone who wishes accurate information on frogs, toads, salamanders, lizards, snakes, and turtles of Minnesota can find it here. There are keys for the identification of all species; there are line drawings and half tones to illustrate various characteristics; there are maps to show the distribution of each species; and there are concise and to the point discussions of range, habits and habitat, breeding, food, call notes, and hibernation.

Dr. Breckenridge has put Minnesota herpetology on a firm basis, but he admits that there is yet much to be learned about our reptiles and amphibians. It is his hope that the nature lovers of Minnesota will, by observation and investigation, help add to the knowledge of this subject just as they have helped to increase the knowledge of birds, flowers, and insects. Arnold B. Erickson.

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## Answers to "A Bird Study Romance"

(1) Harris, (2) wood, (3) sage, (4) willow, (5) pine (6) spruce, (7) tree, (8) chat, (9) coot, (10) flicker, (11) cuckoo, (12) robin, (13) vesper, (14) snowy, (15) blue, (16) raven, (17) red-head (ed), (18) Phoebe, (19) Hairy, (20) Tennessee, (21) Kentucky, (22) Baltimore, (23) seaside, (24) Canada, (25) teal, (26) white-crowned, (27) cinnamon, (28) spotted, (29) purple, (30) cardinal, (31) duck, (32) herring, (33) cerulean, (34) common, (35) king, (36) screech, (37) quail, (38) puffin, (39) swallow, (40) goose, (41) shoveler, (42) least, (43) old squaw, (44) killdeer, (45) whistling, (46) warbling, (47) loon, (48) swift, (49) clay-colored, (50) lark, (51) veery, (52) stork.

# Minnesota Ornithologists' Union

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Officers: President, Miss Georgiana Sanford; Vice-president, Miss Doris Anderson; Secretary-Treasurer, Miss Edith Sanford; Editor, Miss Marie Kennedy.

Meetings are held the first and third Thursdays of each month in the Cloquet High School at 7:30 p. m.

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Meetings are held the first Friday of each month at 2:00 p. m. at the Walker Branch Library. Field trips during April and May on Tuesdays, Wednesdays, and Fridays.

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